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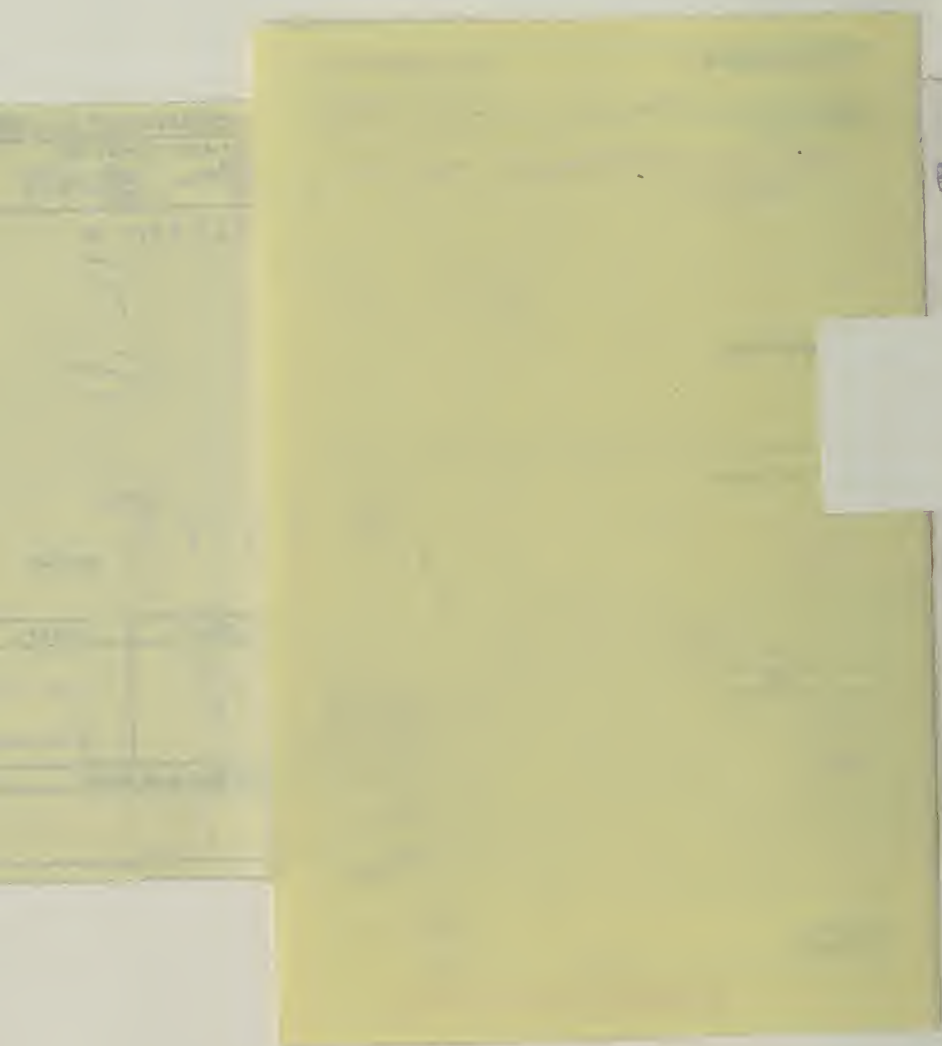
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VOLUME XXV.

1894.

EDITORS:

Prof. CHAS. F. CHANDLER, Ph.D., LL.D.

FREDERICK J. HARRISON.

NEW YORK:

E. & H. T. ANTHONY & CO., PUBLISHERS,

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INDEX TO VOLUME XXV.

	PAGE		PAGE
Abney, W. de W.....	124, 152	Bromide Prints in Various Tints.....	311
Accidentally Exposed Plates.....	335	" Prints, Enameled.....	315
Actinometers for Carbon Printing,		Brush, Care of the Dusting.....	358
141, 271, 395		Brush Development of Bromide Prints..	52
Albumen Paper, Faded.....	8	Burton, W. K.....	271, 395
A uminium.....	235		
" Cleaning.....	43	Camera and Bicycle.....	167, 272
" Flash Powder.....	34, 38	Camera, The Hand.....	142, 178, 211, 265
American Institute, Photo Section.....	139	Camphor, Action of, on Gelatine Plates.	159
Ammonium Sulphocyanide, Sulphocar-		Canvas for Enlargements.....	60
bamide and Thiosinamin.....	163	Carbon Printing.....	173
Angerer, Victor.....	200	" " Actinometers for.....	141, 271, 395
Angle Included by a Lens.....	155	" " for Professionals..	316, 347
Animals, Photographing.....	65	" Tissue, Daylight.....	219, 269
An Interesting Subject.....	233, 273, 323	" Transparencies.....	117
Annual, The International.....	318	Card Mounts, Stamping.....	160
A Practical Flash Lamp.....	3	Care of the Dusting Brush.....	358
"Aristo," Paper, Toning.....	353, 399	Celluloid, Cementing.....	353
" Platino.....	327	Cement for Porcelain.....	267
" Prints, Permanency of	161	Ceramic Photographs, Imitation.....	298
Aristotypes, Reduction of Over-Printed.	132	Chemical Retouching.....	350
Armstrong, T. N.	306	Child Study.....	338
Arrested Movement and a Living Pose..	404	China, Letter from.....	104
Arsenic Compounds, Sensitive.....	236	Cincinnati Photo Society, Proposed.....	344
Artistic Fuzziness.....	294	Clarke, Mrs. S. Francis.....	69
Art, Relation of Photography to....	150, 325	Clemon's Double-Heavy Salted Paper..	372
"At Home" Portraits.....	69, 282	Clouds.....	55, 83
Aurine in Acid Fixing Bath.....	235	Collodion Emulsion, Highly Sensitive...	97
Autotype Company, The	79	" Paper.....	21, 24
		Colored Transparencies.....	163
Baby Ruth Photographed.....	5	Coloring Photographs.....	201
Backgrounds.....	74	Color Photography.....	79
" Indented.....	268	" Printing, Three.....	18
Baker, George C.....	126	" Screens.....	219
Baths, Combined.....	73, 131, 199	" " Burchett's.....	188
Bichromate Solutions for Pigment Papers	368	" Sensitive Plates.....	167
Bicycle, Camera and.....	167, 272	Colors, Photography in.....	49, 50, 63, 221
Black for Woodwork.....	147	" Plates for Photography in.....	133
Blair, T. H.....	195	Colton, A. L.....	358
Blue Prints, Black Tones on.....	320	Combined Baths.....	73, 199, 131
Blue Transparencies.....	23	" " Boric Acid in.....	199
Boothroyd, Jabez.....	28	Complimentary.....	104
Boric Acid Toning Bath.....	98	Convention Column.....	197
Bowersox, A. L.....	253	" Notes.....	262
Brass, Coloring.....	6	Copper Etching.....	234
Bromide Enlargements.....	76, 162	Copying.....	118, 156
" Printing.....	103, 315	Copyright.....	219
" Prints.....	52		

	PAGE		PAGE
Country, A Fair.....	358	Gaedicke, J.....	24, 205
Cracked Negatives.....	201, 279	Gas Cylinders for Lantern Work.....	63
Curtains, Studio.....	284	Gelatine Dry Plates for Color Photog- raphy.....	133
Daguerreotypes, Cleaning.....	146	Gelatino-Chloride Papers, Developing....	306
Darkroom Illumination.....	3	Giles, C. M.....	326, 395
Davis, Frank P.....	389	Gitchell, Corwin.....	221, 335, 393
Daylight Carbon Tissue.....	219, 269	Glass, Writing on.....	82
Developers.....	225	“ Vessels, Photographing.....	267
Developing Solutions, Colorless.....	187	Gold, Silver and Platinum in Photography	336
Development, Brush.....	52	Gray, R. D.....	40
“ of Unknown Exposures....	306		
“ Slow.....	192	Hand Camera, The.....	142, 178, 211, 265
Discoveries, Rewards for.....	75	Halation.....	345
Dodge, Charles Richards.....	227	“ Backing for.....	147
Dodges, Printing.....	126, 149	Half-Tone, Originals for.....	352
Dollond, A. W.....	153	“ Work.....	367
Doyle, F. H.....	360	Hasbrouck, D. C.....	358
Dusting Brush, Care of the.....	283	Hayes & Co., C. M.....	347
		Heat, Intensification by.....	136
Economical Development with Pyro.....	39, 213	Heldmann, J.....	52
Electricity, Retouching by.....	373	Hickmott, W. J.....	192
Electric Light in Photographic Studios, 144, 160, 180, 263, 299, 348,	391	Hints for the Printer.....	359
Electrograph, The.....	324	Hitchcock, Romyne.....	50
Elliott, A. H.....	1	Hoover, D. W. C.....	103
Elmendorf, D. L.....	223, 362		
Enclosures, “Aristo”.....	33	Illumination, Darkroom.....	3
Encouragement.....	67	Imitation Ceramic Photographs.....	298
England, The New Movement in.....	8	Ink for Writing on Glass.....	353
Engravers, Wood Blocks for.....	203	Instantaneous Photography.....	124, 152
Enlargements, Bromide.....	76, 162	In Sunlight and Darkness.....	10
“ Canvas for.....	60	Intensification.....	319, 330, 385
Equine Photography.....	121	“ and Reduction.....	319
Exhibitions, A New Idea in.....	227	“ by Heat.....	136
“ Seventh Annual.....	136, 172	Intensifier, A Good.....	28
Exposure and Development.....	28	Interiors, Photographing.....	345
“ and Exposure Meters.....	313	In the Printing Room.....	111
Exposures, Timing.....	148		
		Joé, J.....	98, 201
Flash Lamp, A Practical.....	3	Joel, Jacques.....	309
“ Light for Orthochromatic Work..	34		
“ “ Photography.....	37, 274, 381	Kinetograph, The.....	120
“ “ Portraiture.....	170	“ Kombi,” The.....	310
“ Powder, Aluminium.....	34		
Film-Making, The Difference in Processes of.....	194	Lambert, Rev. F. C.....	13, 47, 189, 229
Films, Curling of.....	160, 235	Lamp, A Practical Flash.....	3
“ Stripping.....	131	Lane, C.....	239
“ The Use of.....	277	Lantern, Cleaning the.....	291
Fish-Glue Process, The.....	367	Lanternoscope.....	23
Fixing Bath.....	185	Lantern Screens.....	327
“ Before Toning.....	43	“ Slides.....	157
Fog, Red.....	95	“ and Transparencies.....	292
Formaldehyde.....	321	“ Binding.....	93
Fourtier, H.....	65	“ by Contact.....	61
Frames, Mounts and.....	13, 47	“ by Reduction.....	91
Fringing.....	349	“ Coloring.....	198
		“ Interesting.....	93

PAGE	PAGE
Lantern Slides, Portrait.....	23
" Work.....	22, 63, 362
Large Lenses.....	293
Latent Image, The.....	159
Lea, M. Carey.....	396
Lens, Angle Included by a.....	155
Lenses.....	29
" Large.....	293
" Production of.....	164
" Tele-Photo.....	76, 113
" Treatment of.....	202
Liesegang, E.....	367
" R. Ed.....	65, 136, 163, 332
Lippmann, G.....	296
Magic Mirrors.....	368
Magnesium Powder.....	287
Meacham & Sabine.....	68
Mercury, Transit of.....	354
Metallic Spots on Negatives.....	161
Meteors, Photographing.....	353
Meters, Exposure.....	313
Mezzo Plates.....	112
Military Photography.....	80
Miller, Edward B.....	53, 84
Mines, Photography in.....	169
Modifying Platinum Prints by After Treatment.....	153
Mounting and Framing Prints.....	363
" Lantern Slides.....	127
" Trimming and.....	53, 84
Mounts and Frames.....	13, 47
" Damaged.....	116
Munn, James.....	203
Murray, A. S.....	400
Names and Titles of Pictures.....	189, 229
Natural Colors, Plates for Photographing in.....	133
Negatives, Cracked.....	201, 279
" Marking.....	129
" Metallic Spots on.....	161
" Retouching Landscape.....	289
Nicol, Dr. John.....	30
Niewenglowski, G.....	202
Nutt, H. S.....	29, 127, 157, 225
Obituary (Dall, John H.).....	46
" (Fredricks, Charles D.).....	236
" (Insley, H. E.).....	285
" (Masters, W. H.).....	285
Opticians, A Hint to.....	326
Orthochromatic Photography.....	112, 210, 234
Our Aims and End.....	355
Photographers' Association of America, Awards.....	259
Photographers' Association of America, Convention.....	125, 214, 215, 216
Photographers' Association of America, Diplomas.....	290
Photographers' Association of America, Exhibition of Apparatus.....	261
Photographers' Association of America, Official Report.....	245
Photographers' Association of America, Programme.....	216
Photographers' Association of America, Prizes.....	89
Photographers' Association of Indiana,	309, 342
Photographers' Association of Missouri..	376
" " Ohio.....	300
" " " Awards.....	303
Paper, Clemons' Double Heavy Salted .	372
" Plain Salted.....	361
" Fireproof.....	321
Penlake, Richard.....	332
Permanency of Undeveloped Image.....	218, 272
Phanero-gen.....	129
Phenylhydroxylamine.....	351
Photo-Autocopyist.....	116
Photographer, The First.....	96, 100
Photographers at Home and Abroad....	253
Photographic Section, American Institute	139
" Solutions, Keeping Quali- ties of.....	360
Photographing Animals.....	65
" Interiors.....	345
" Meteors.....	353
Photographs, Coloring.....	201
" Game of.....	148
" Sunny.....	25
Photograph, The First.....	35, 199
Photography and Art.....	185
" A Plea for National Recog- nition of.....	30
" Color.....	79
" Equine.....	121
" Flash-Light.....	37, 274, 381
" Handicaps in.....	395
" in Central America.....	387
" in Colors.....	40, 50, 63, 221
" in London.....	391
" in Mines.....	169
" Instantaneous.....	124, 152
" Military.....	80
" Orthochromatic.....	112, 210
" Spark.....	32
" Sunday.....	40
" Vanadium Salts in.....	123
Pictures, Names and Titles of.....	189

	PAGE		PAGE
Place, Frank A.....	167, 196	Seasoning Wood.....	220
Plain Salted Paper.....	361, 162	Sensitive Papers in Varied Tints.....	166
Plates, Color-Sensitive.....	167	Serrell, Harold.....	10
" Damaged.....	159	Shepard, James.....	86, 354
" Increasing Sensitiveness of.....	146	Shutters—An Important Decision.....	370
Platino Chlorides, Some New Methods of Obtaining.....	396	Slow Development.....	192
Platinotype Prints, Modifying, by After Treatment.....	153	Smith, Francis P.....	55, 83
Platinum Prints.....	129, 162, 293, 294	" H.....	32
" " Red Tones on.....	331	" J. Reuel.....	288
" Toning.....	238, 353	" R. D. O.....	270
Portraits, At-Home.....	69, 282	Snowflakes, Photographing.....	185
Portraiture, Flash-Light.....	170	Societies.....	35, 71, 107, 138, 175, 207, 242, 274, 311, 340, 374, 410
Posing Study.....	128, 223	Solutions, Bichromate.....	368
Postal Cards, Sensitized.....	7	" Keeping Qualities of.....	360, 383
Powdering Glass.....	385	Spark Photography.....	32
Prince, L. M.....	344	Steinheil, Adolf.....	30, 199
Printer, Hints for the.....	359	Stein, S. L.....	292, 373
Printing.....	111, 280	Stereoscopic Views.....	86
" Bromide.....	103, 315	Stine, W. M.....	360
" Carbon.....	141, 173	Stripping Films.....	58, 131, 200
" Dodges.....	126, 149	Studio on Wheels.....	350
" Three-Color.....	18	Sulphite of Soda.....	234
Print Mounter, Success.....	379	Sunday Photography.....	40
Prints, Mounting and Trimming of.....	363	Sunny Photographs.....	25
" Washing.....	65	Swing-Backs and Their Uses.....	240
" Yellow Spots on.....	129	Tele-Photo Attachment.....	223, 362
Process Blocks, Mounting and Treatment of.....	402	Tele-Photographic Lenses.....	76, 113
Prospective.....	1	The Deposit of Silver in Photographic Plates.....	393
Pyro, Economical Development with.....	39, 213	The First Photograph.....	35
" Stains.....	116	The Influence of Gelatine on the Double Decomposition of Salts.....	295
Reducing Camera, Stand for.....	400	The New Movement in England.....	8
" Solution.....	96, 385	The Roll-Holder Question.....	213
Reduction, Local.....	200	Thermometer Scales.....	44
" of Over-Printed Aristotypes.....	132	The Use of Eosin in Orthochromatic Photography.....	112
Relation of Photography to Art.....	150, 325	Thiocarbamide.....	59
Residues, Recovery of.....	161	Thiosinamine.....	21, 130
Retouching.....	351	Three-Color Printing.....	18
" by Electricity.....	373	Timing Exposures.....	148
" Chemical.....	350	Toning.....	20
" Landscape Negatives.....	289	" "Aristo" Paper.....	353, 399
" Varnishes.....	20	" Bath, Economical.....	159
Robinson, H. P.....	8, 355	" Collodion Paper.....	24
Rockwood, George G.....	324, 339, 391, 409	Transparencies, Blue.....	23
Rösch, John.....	121, 135	" Colored.....	163
Rotherham, C.....	150, 325	Transparency, A Novel and Invisible.....	368
Ruby Glass.....	161	Trimming and Mounting.....	53, 84
Sarony, O.....	99	Tripod Leg, Sliding of.....	118
Saturator, The Principle of a.....	401	Fungsten, Photo-Chemistry of.....	241
Scandlin, W. L.....	18	Tyndall, Prof.....	44
Scenes in the City.....	288	Undeveloped Image, Permanency of.....	186
Screen, Color.....	219	Valenta, E.....	63, 132, 133, 238
Screens, Burchett's.....	80		

	PAGE		PAGE
Vanadium Salts in Photography.....	123	Waterhouse, Col. J.....	112
Varnishes, Retouching.....	236	Webster, F. Walcott.....	27
Vignettes on Dark Grounds.....	235	What Kind of Negatives Do You Get?..	332
Vignetting.....	109	Wilcox, Col. V. M.....	188
“ Masks.....	350	Williams Flash Lamp.....	3
Ward, Catharine Weed.....	296	Wilson's Cyclopædic Photography.....	274
Warm Weather Troubles....	177, 270	Wood, Seasoning	220
Washing Prints.....	65	World's Fair Work.....	10
“ Prints and Negatives.....	330	Wynne's Exposure Meter.....	244
		Yellow Screen.....	145

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EDITORS :

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

PROF. ARTHUR H. ELLIOTT, PH.D., F.C.S.

FREDERICK J. HARRISON.

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FEBRUARY 1, 1894.

No. 2.

FLASH-LIGHT PHOTOGRAPHY.

JUDGING from present indications, there is a strong movement throughout the country in favor of the greater adoption of the flash lamp as a source of illumination. In fact the old lithographed theatrical poster is already being rapidly replaced by the flash-light picture, and it only remains to perfect the process and a very lucrative line of business drops into the hands of the professional photographer. The Williams flash machine, described and illustrated in the January number of the BULLETIN, is a decided improvement over all such apparatus hitherto introduced, and has already accomplished much in the direction of popularizing the use of the flash lamp in the studio.

The first serious attempts at portraiture by artificial light were made somewhere about 1858, pyrotechnical mixtures being used, with reflectors and diffusing screens. Later the light from sulphur burning in oxygen or dropped upon molten potassium chlorate was tried. In 1859, Bunsen and Roscoe noted that the light from burning magnesium was well adapted for photographic purposes, and this resulted in the quite extensive use of band lamps. These are still in use, and consist of a train of clock wheels driven by a spring. The motion is regulated by fly-wings, which may be set at any angle. The feed motion should be regulated so that the rate of feed is slightly greater than the rate of burning, and the magnesium ribbon is then pulled back occasionally. Here the chief difficulty encountered is the irregular burning of the magnesium, due to its partial oxidation and to traces of impurity. Any sudden jerk or draught of air readily extinguishes the flame. Perhaps the best method for the use of magnesium ribbon is to plait it and make a magnesium torch. This gives a larger and more steady flame, and less harshness results. A number of strands of magnesium ribbon are loosely twisted around each other, care being taken to avoid sharp bends or any tightly twisted places. Magnesium, however, is now mostly used in the form of powder. It should be kept dry, and should

SUNDAY PHOTOGRAPHY.

THE photographers of Springfield, O., recently made a concerted effort to close all photographic studios on Sundays. The City Council was petitioned to pass an ordinance closing up all photographic galleries and inflicting fines on all delinquents. Not hearing of any reply to the petition, we wrote to one of the signers asking for particulars. His reply runs: "The petition was from the photographers only, and was signed by all of them. It was presented to our City Council and by them 'referred,' and it will probably die. I am informed by one of the members that it would be useless to pass such an ordinance, as they would have no right to enforce it." So Springfield photographers must continue to pass Sundays away from their families and hunt for the humble dollar.

PHOTOGRAPHY IN COLORS—THE METHOD AS PRACTICED BY R. D. GRAY.

As is the custom when treating on the subject of photography in colors, much that is exaggeration has attended the announcement of the perfecting by Mr. R. D. Gray of a method for the projection of photographs on to a screen by means of an optical lantern, such projected images being colored true to Nature. Mr. Gray is the well-known lens maker, whose periscope lenses testify to his skill as an optician. He is as modest as he is original and painstaking, and does not claim to have done anything new, but to have brought to perfection the methods employed by Cros, Du Hauron, Ives, Vidal and Vogel.

Two lantern demonstrations have been given by Mr. Gray during January, one at Chickering Hall, New York, and the other before the Brooklyn Institute. At this latter demonstration Mr. Hopkins contributed some descriptive remarks, and his prelude follows in full:

"Photography is an aggregation, not a single invention. Since the discovery of the daguerreotype, more than fifty years ago by Daguerre and Niépce, photography has taken on many phases and has arrived at a perfection that is fairly satisfactory. In all these years, however, those interested in this art have desired photography in colors. Both money and thought have been freely devoted to this subject, but, as yet, nothing has been discovered to warrant us in saying that color photography is an established fact. Some experimenters, recognizing the difficulties of the problem, abandoned the idea of making photographs in colors, and sought to reproduce the colors of Nature by the aid of photography, by combining the primary colors by the use of three positive photographs, each designed to allow one of the colors to pass through in parts where that color appears in the scene represented. These colors and combinations of them in different proportions as controlled by the different positive pictures, reproduced with greater or less fidelity all the colors of Nature, when the several images were superposed.

"I will not go into the history of color photography, but will leave you to gather information of this kind from the scientific journals. I will only say that in the year 1869 Mr. Collen, an English portrait painter, proposed a theory of photographing objects in a manner that would show their natural colors. About the same time M. Cros and M. Ducos Du Hauron, of France, made experiments in the same direction with some success; later, Dr. Vogel, of Berlin, Prof. Léon Vidal, in France, Mr. Bierstadt and Mr. Ives, in America, have

made similar experiments, each producing photographic pictures showing colors more or less like those of Nature.

"Mr. Gray, of New York, whose pictures are to be shown to-night, has profited by the experience of all who have preceded him, and has brought the art to a state of perfection which permits of projecting these beautiful pictures with no more difficulty than that attending the operation of any stereopticon apparatus, so that we who are here this evening may enjoy the pictures without the annoyance of long intervals of adjustment and experiment. I think you will all agree before the exhibition closes, that Mr. Gray is entitled to great credit for his masterly handling of the subject.

"Before proceeding with the pictures I will endeavor briefly to give a general explanation of the principle underlying 'tricolor photography,' as Mr. Gray terms it. When we look through a colored glass, a red one, for example, at green foliage, we can only see its outline; in color it appears black, because the red glass stops all light rays except those containing red. If a green glass be interposed in like manner between the eyes and the foliage, the leaves will show green, while a red flower would appear black. In a similar way blue glass is transparent to blue light, while it stops off the yellow rays. A photographic view taken through a red screen would be transparent only in such portions as receive red, purple and yellow light from the object, all other rays being stopped. The same view taken through a green screen would be transparent to green, yellow, and partly to blue, while it would be opaque to red. A blue screen serves to stop off all light except blue, violet and purple.

"The primary colors used in these experiments are red, green and blue, or modifications of them. On these modifications depends the success of color photography as now practiced. Of the hundreds of commercial dyes examined by Mr. Gray, not one of them, used alone, would answer his purpose; after numberless experiments he finally succeeded in effecting the combination of several colors that would fill the requirements of a primary. When a view taken through a red screen is projected with red light, all the parts of the picture containing any red and yellow are shown on the screen. A view taken with the green screen, when projected with green light, will show all the parts of the picture containing any green and yellow. A picture taken through a blue screen projected with blue light, shows the blue, violet and purple. Now, when all these views are superposed upon the screen, the red, green and blue light combine in proper proportions throughout every part of the picture, producing a picture containing all of the colors of the scene represented. Where white occurs, it is the product of the several primary colors, no white light being used in the projection of the pictures; where black occurs, it is shadow merely.

"Having thus in the most general way described the method by which these pictures are produced, we will now proceed to show some samples of Mr. Gray's work, alternating the pictures in colors with plain photographic pictures.

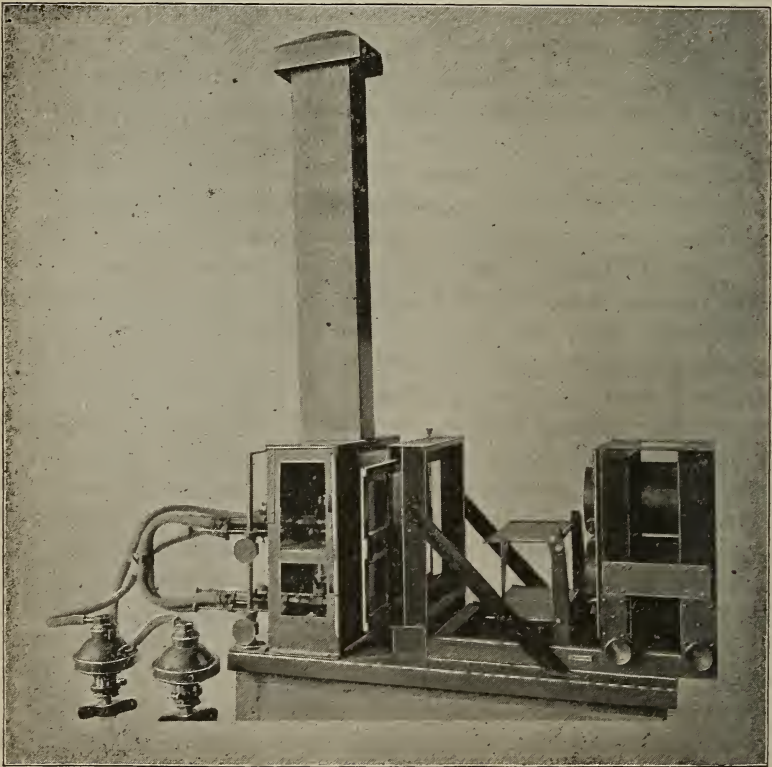
"Owing to the long exposure required in taking pictures through color-screens, views of moving objects cannot be produced for projection in colors.

"To illustrate what was said a moment since, we will project upon the screen with red light the slide which controls the red, and to a certain extent the purple and the yellow, in the picture; removing that and inserting the slide for the green, we see portions of the picture illuminated by green light. These

portions represent the green and the yellow of the picture. Substitute the blue, we have what is practically an ordinary black and white view tinted blue.

"Now, by combining all these we have not only all the primary colors, but such intermediate shades as are requisite for a complete picture in the colors of Nature."

Then followed a series of photographs in colors, the beauty and perfection of which it is not an easy matter to describe. The large audience testified to its keen appreciation by repeated applause. Several magnificent views of the terraces and geysers in Yellowstone Park were thrown on the screen, the colors appearing perfectly natural. Some objection has been raised against the application of the term "photographs in colors" to these projections, but we maintain that the term is accurate, for the transparencies are certainly photographs, and they are depicted on the screen in colors. The question might be



asked of dissenters, where does the photograph end and what is the representation? Several slides, colored by hand, were exhibited, and the blackness of the shadows noted in distinction to the colored shadows of the pictures produced by the tri-color combination. The Garden of the Gods was a particularly beautiful slide. A portrait, chrysanthemum, watermelon, painting and a wonderful table of fruit created much astonishment, the rendering of the colors being truthful and wonderful. Several roadside scenes were simply marvels of beauty. The whole exhibition was a revelation to all present, and, in the opinion of those capable of judging, marked a distinct advance over anything heretofore attained.

A visit to Mr. Gray brought out some of the details of the method adopted that will probably prove interesting reading. Cut films specially prepared and used in special plate-holders to insure flatness were used. It is of the greatest importance that each film should register correctly, that is, should be at the same distance from the lens. Three negatives are made one after the other, the one for the green being made upon an ordinary orthochromatic film through a green screen fixed in front of the lens. The plate for the red is previously dipped in aniline green, and a red screen is used in front of the lens. For the blue a slow transparency plate is used without a screen. The average exposure for the red plate, using diaphragm $f/8$, is four minutes. The three consecutive exposures are made as rapidly as possible, to avoid any changing of the shadows. Care in the development is necessary, the density of each of the three negatives depending somewhat on the subject.

The lantern used by Mr. Gray is shown in the illustration. The most important item is the correct registering, that is, insuring absolute superposition. If one solid piece of glass were used, the heat of the lantern would destroy the perfect registering. A wooden frame having three or four openings is therefore employed, and one slide is placed in position and sealed there. The other two are adjusted by means of an ingenious screw adjuster of delicate movement which will move the slides in any direction until perfect registry is established. When in position a dab of wax on the four corners holds each slide while more substantial fixings are applied. The mats are on a separate frame between the slides and the condensers. The lantern color-screens are placed between the mat frame and the condensers. The same screens used in front of the camera may be used on the lantern, though this is not essential. The fourth lantern shown in the figure is used for trick effects and plays no part in the production of the colored pictures.

Upon the quality of the camera screens and the perfection of the registry and superposition depends the perfection of the results. These two qualities Mr. Gray has succeeded in obtaining. As to the coloring matter on the screens employed, we have no details. We can simply speak of the results, and these are of the highest excellence.

ITEMS OF INTEREST.

At a recent meeting of the Photographic Society of Philadelphia, Dr. Mitchell stated that there had been considerable discussion in the photographic periodicals lately relative to fixing before toning of collodio-chloride prints, and that he had been making a few experiments on his own account, and found that by immersing the prints in a solution of hypo of about 1 to 20 for three or four minutes and then toning in a combined toning and fixing bath, the prints toned readily and took the proper colors. This mode of treatment was valuable in connection with the combined bath, inasmuch as the hypo in said bath was apt to become exhausted, thereby failing to remove all the free silver; but what free silver would escape the first bath of hypo would surely be eliminated by the combined bath.

ALUMINIUM is being largely employed in the making of lens mountings and camera fittings. The *Druggists' Circular* furnishes the following on cleaning and polishing this metal: "Sheets of aluminium are rendered beautifully white by

dipping them first into a strong solution of caustic potash and afterwards into benzine ; the latter removes all dirt and grease. When thus cleansed, they are plunged into a bath of 2 parts of nitric acid to 1 of water, next into strong nitric acid alone, and finally into a mixture of equal parts of vinegar and water. They are then carefully washed in pure water, and thoroughly dried in hot sawdust. A very brilliant luster may be imparted to objects of aluminium, without much rubbing, by immersing them in an emulsion produced by shaking together equal parts of olive oil and rum."

AN easy method for the conversion of degrees Centigrade into Fahrenheit or *vice versa*, is given by G. Watmough Webster, F. C. S.:

"To reduce a given number of degrees Centigrade to Fahrenheit. *Rule.*—Double the number and subtract one-tenth of the result,

"Fahrenheit to Centigrade. *Rule.*—Increase the number by its ninth part and halve the result.

"The necessary subtraction or addition of 32 at the proper stage is performed in the usual manner."

INTENDING exhibitors at the Exhibition of the Newcastle-on-Tyne and Northern Counties' Photographic Association may obtain entry forms from the BULLETIN. The exhibition opens on April 13th, and closes April 28th.

THE late Professor Tyndall did much to make science popular, possessing the happy knack of presenting scientific facts and theories in an extremely interesting and lucid manner. It is to be regretted that photography is practically without such devotees. One of Tyndall's contributions to our knowledge of light and heat has been going the round of the papers lately. Tyndall separated the heat rays of luminous sources, such as the sun and the electric light, from the visual rays, by passing the rays through a solution of iodine in bisulphide of carbon, contained in a vessel with rock salt ends. Rock salt is one of the very few substances that allow heat rays to pass freely. Having thus cut off the visual rays, Tyndall brought the invisible heat rays to a focus outside of the apparatus, setting fire to various inflammable substances.

WE have started a registry book of operators, retouchers and printers who are looking for employment. Many inquiries reach us from both employers and employees, and a book of this nature should be of benefit to the fraternity generally. No charge is made to employees for information furnished. Indeed, the BULLETIN in the future, as in the past, will do all in its power to be of real service to the photographer. Our return will be the good-will of those assisted.

OUR thanks are extended to the Minns Novelty Studio, New London, O., for three excellent portraits, a profile, three-quarter and a full face. Of the three we prefer the three-quarter. The modeling in the face is exquisite, and the whole treatment is indicative of a full acquaintance on the part of the operator with the subject of posing and lighting. We would like to see this same negative printed on mat-surface "Aristo."

ALL communications for the March issue, all new advertisements and any matter connected therewith, should reach us not later than February 22d.

Wilson's Photographic Magazine is to start a movement aiming at a reduction of insurance rates to photographers. This is a step we have always advocated, and stand ready now to do our share. Full details of fires in studios sent in to us will be forwarded to the quarter where they will do most good.

It is satisfactory to note that the absurd regulations that governed photography at the World's Fair do not obtain at the California Midwinter Exposition. The *Journalist* remarks :

"The question of what was to be done by the Exposition management has been seriously considered very frequently of late by the thousands of young men and women interested. At the White City every obstacle was put in the way of those who wanted to secure good photographs of the wonders of the Fair. Not only was a daily rental exacted, but the size of the camera was made so small that it was extremely difficult to use it to advantage.

"If one wished to take larger pictures he had to secure a special privilege, and then was compelled to allow the employees of the Fair to develop the negatives. The result was a great deal of well-grounded dissatisfaction, and no end of efforts to evade the law established.

"To obviate all disagreeable features in this field at the Winter Exposition, the Executive Committee has decided to allow all amateur photographers to enter the grounds with their cameras free of any additional charge for the privilege of taking pictures. All they will be asked to do is to sign an agreement that they will not use the pictures they obtain for commercial purposes.

"They will be permitted to take into the grounds a hand camera of any sort, as long as it is not larger than 5 x 7. For obvious reasons no tripods will be allowed in the grounds. They would interfere with those who do not wish to take photographs and the committee intends to act fairly to all."

THE Christmas number of the *Canadian Photographic Journal* was a distinct success. The frontispiece is a fine print on American "Aristo" paper, remarkable among other things for the fact that five thousand were printed in two and a half days. The articles are bright and useful, and too much praise cannot be bestowed on the publisher for the excellent press work. Our enterprising contemporary across the border has set an example in the way of Christmas numbers that will be hard to equal.

A FEW copies of "The International Annual" of Anthony's Photographic BULLETIN are still on hand. The book has been a tremendous success and earned high praise everywhere. The frontispiece to the "Annual" is a print by Dana on collodio-chloride paper, manufactured by the American Aristo Company. This paper has the invaluable properties of being permanent, and of permitting handling without detriment to the surface, properties which can hardly be claimed for many other so-called aristotype papers. The factory which has for some time past supplied this paper to photographers was gutted by fire last December. With praiseworthy foresight, the manufacturers had prepared for emergencies by building another factory adjacent to the old one, and in a week, or before photographers had learned of the fire, this new building was in active operation.

WITH considerable regret, we announce the death of John H. Dall, who for many years was well known as a prominent photographic stock dealer of San Francisco, he having succeeded Bradley & Rulofson. Mr. Dall made an independent fortune in mining operations previous to embarking in the photo-stock business. He retired some time ago, being succeeded by Messrs. Monahan & Shillcock.

WE regret exceedingly to have to record the death of John J. Smith, who for the last five or six years had been in the employ of our publishers. While on a ladder filling orders, he lost his balance and fell, sustaining injuries from which he died.

THE January number of the *St. Louis and Canadian Photographer* reflects the greatest credit on Mrs. Fitzgibbon-Clark, and all associated with her in its production. The frontispiece is a mosaic, "Thirty Studies," by Stein, printed on American "Aristo," and demonstrates the absolute perfection of this collodiod-chloride emulsion paper. We are safe in saying that albumen and gelatine papers could not be made to yield prints approaching these.

IN the same journal, "Hegyessy" remarks concerning conventions: "Do not impose upon the members by the reading of papers from long-winded theorists. * * * Let us, if necessary, pay a man of reputation and ability to practically demonstrate how to properly light a subject, pose head, body and hands, arrange drapery, etc., give practical demonstrations with chalk and black-board, and answer any questions that may be put to him." When it is remembered that the Photographers' Association of America is supported and controlled by the professional photographers of this country, it cannot but strike the impartial observer that there is sound common sense in the above remarks. Theoretical papers can be published in the journals, and usually are but *résumés* of little value to the practical worker. The convention is the place, of all others, for the interchange of ideas; but let these ideas be practical ones, that the photographers may be to some extent repaid for their time and expense. Conventions only serve a good purpose when the photographers take a live interest in them and this interest in the conventions can only be aroused by making the conventions of interest to the photographers. More power to your elbow, "Hegyessy," but what is hyposulphite of ammoniac?

AFTER considerable delay, due to trouble with the printer, "The Blue Book of Amateur Photographers" (American) has been issued. It is a neat little publication of much merit. Several excellent illustrations throughout the book greatly increase its value. Secretaries of Societies and compilers of statistics will find this book of enormous value.

THE pictures mentioned in Mr. Miller's article on "Trimming and Mounting" may be seen at the store of our publishers, 591 Broadway, New York, or will be sent for examination to any of our friends who are interested in this subject.

MOUNTS AND FRAMES.

BY REV. F. C. LAMBERT, M.A.

(Continued from Page 13.)

NEXT comes the question of color. Until recently, a white mount was taken as a matter of course, and quite as though no other was possible. This melancholy fact is probably largely due to the makers and dealers having nothing but white card to offer. But they, in turn, and with much truth, reply that nothing else is demanded. Attention is here drawn to this point as one of great importance. It will now and hereafter very largely rest with the consumer to ask for and demand a variety and wide choice of tints in his mounts. Returning again to first principles, we see that the mount must separate the print from its surroundings. Hence, the mount must evidently be of some tint different from either the surroundings or the print. Were it like the former, it would be equivalent to bringing the surroundings close up to the print. Were it like the print, it would only be equivalent to expanding the print up to the frame. Again, it must not contend with the print for attention, but must assist the scheme and sentiment of the picture. Hence, its color must not be so pronounced as to attract any attention away from the print, but should, on the other hand, be in harmony and keeping with the style and subject of the picture. Thus, practically, two courses are open to us. These I may for the moment designate as the contrast and the repetition methods. By the former I mean the selection of some color of a complementary or contrasting hue. Suppose the print to be a gold-toned silver print, with a tendency towards red or purple. This red or purple-violet tint would be emphasized by a green or yellow-olive mount. Again, a creamy-yellow mount is apt to make an ordinary black platinum print look cold and blue, while a green tendency would give the same print a warmer and slightly purple tinge. A few pence may be very profitably invested in half a dozen sheets of differently tinted crayon or other papers, and their various effects studied in conjunction with the same print, using each as a temporary mount by placing the print upon it and then covering all with a thin sheet of white glass.

It will be observed that each of the differently colored mounts has its own peculiar effect in tending to give the print some slightly different hue. These results may at times be of great value. For instance, in the case of a cold-gray platinum print of a snow scene, where the wintry sentiment is desirably prominent, the creamy or *écru* mount may be effectively used, and so on. The great danger of this powerful method of mounting is in carrying it to an excess, and so betraying its ends and offending cultivated taste, as well as drawing off too much attention from the print by the sheer force of color contrast. The second or repetition method, while being more subtle and retiring, is at the same time more effective and less dangerous to employ, and also less liable to offend cultured taste. This consists in the use of a color closely allied to, but not identical with, that of the print itself. For instance, suppose we have to deal with a sepia platinotype. We may easily find quite a large number of tints ranging from raw umber to vandyke, or from burnt ochre to mummy; in fact, warm browns of a green, gray, red, yellow or an orange tendency. It is well worth the experiment of dipping a small sheet of rough drawing paper in a decoction of coffee. The points here needing chief attention are, first, the

danger of having a tint so close to that of the lighter tones of the print that it looks like a bad match ; and, secondly, going to the other extreme of one which shows too decided an approach to a color contrast. Both these dangers increase as the color grows more pronounced in hue and deeper in strength. This leads us to consider the very important question of depth of color of the mount. Take any ordinary black and white print which contains well-marked parts of white and black. Place this, first, on a sheet of the whitest, and then on a sheet of the blackest paper readily obtainable. The white mount immediately kills all the high lights. They, of course, fail to "tell" on the white mounts, while the blacks and darks seem lost in impenetrable gloom. On the other hand, the black mount brings out the high lights with great strength, but the deep shadows are enfeebled and lose all vigor and strength, and they, moreover, are liable to look gray and foggy. Black or white mounts, then, are only of very exceptional use. This experiment, however, is valuable, as pointing to an important principle. If our print is one which chiefly relies on the lighter tones and high lights, the mount must err rather on the side of darkness than be too light ; while, on the other hand, if the subject is one in which its success depends upon due appreciation of vigorous shadows, we must not endanger them by having a mount so dark as to approach competition.

There still remains the question of texture. Although we have tacitly assumed that we are only considering paper or card as the mounting material, it by no means follows that these are the only ones possible. Other substances, however, have their special characters and conditions. The examination of them may conveniently be deferred until opportunity offers for the consideration of a subject hitherto greatly and unduly neglected, viz., the application of photography for purely decorative purposes. The degree of roughness, *i. e.*, presence or absence of grain, is considerable, and its presence is considerably emphasized by the conditions of lighting, a cross or side lighting bringing out strongly the miniature hills and valleys of the paper. The degree of roughness or smoothness, apparently and by common consent, should seem to be in keeping with the size and importance of the print. A small print is usually examined at a closer distance than a larger one, so that the latter may consistently be surrounded by a rougher grain than the smaller one without the roughness being a source of leaking of attention from the picture. Again, few people would, without some very urgent reason, think of putting a very smooth print on a very rough mount, or *vice versa*. In all cases it is well to avoid any excess either in the way of smooth and shiny or rough and gritty surfaces, as likely to be an offence against good taste by their self-assertive character.

The question of the bevel, where "cut-out" mounts are used, is one of considerable importance. Let it be here observed, that the nearer we get to the picture, the more care is needed to guard against any eccentricity or disturbing, distracting element, as being likely to detract from the picture. Any strongly marked feature, say of color contrast, that would be permissible in the frame, might be positively detrimental so near to the picture as the mount bevel. On the other hand, the idea of a bevel is to "set back" the picture, and if the bevel is not differentiated from both the mount and the picture in some way, we may naturally ask what purpose it is likely to serve. After numerous experiments and extended observation, the general impression prevails that the cut-out or bevel mount is not generally calculated to advance the merits of the picture. Where

its use is decided upon, it will be well to avoid any violent contrasts, either of tint or tone, or conspicuous features, in the way of depth or adjacent lines. In visiting a recent exhibition, a prominent example was on view, well illustrating "how not to do it." The picture was a dark, cloudy, sunset, river-side scene; the mount and frame were very nicely selected in suitable, harmonious, quiet brown tones, but the bevel was a strong white line, and utterly spoiled the total result. At a little distance—3 or 4 yards away—the only feature that could be felt as well as seen was this glimmering white rectangle in a mass of gloom.

It may be said that as so many difficulties and dangers exist in connection with the choice of a mount, why not do away with a mount altogether? A strong movement in this direction by a small party has been just attempted, but the results do not in most cases justify the means. As a rule, "close-up" framing does not suit any monochrome picture, be it photograph, etching, engraving, etc. The power and proximity of the surroundings are too strong, and photographs, as a general rule, lose considerably by the absence of a suitable mount. It will also be obvious that many of the foregoing considerations apply, *mutatis mutandis*, to the choice of a frame. On the whole, it is perhaps easier to suggest broad outlines for frames. For instance, it is better to err rather on the side of width than narrowness, although excessive width quickly dwarfs and renders insignificant the enclosed picture. Also, it is better to err on the side of contrast between mount and frame than have them anything like a bad match in point of color; because, while the former, *i. e.*, strong contrast, tends to fatigue the eye perhaps, and so drives it away to seek repose, the latter error tends to annul the *raison d'être* of both, viz., isolation and support. Any eccentricities in the way of complicated mouldings, corners, grotesque embellishments, crude color, etc., will, of course, be at once put out of court by the force of good taste.

The chief and general principle seems to be that the mount and frame should bear a somewhat similar relationship to each other as do the chief features of the picture. That is to say, if the print be a vigorous one, with a wide range of tone and pronounced contrasts, the mount and frame may almost be to each other as black to white. On the other hand, where the picture is delicate and rich in fine gradation and subtle passages of exquisite half-tones, this valuable quality is best supported by a frame and mount which are in a similar way closely related both in tint and tone.

It, of course, goes without saying that, having expended some considerable care and thought on the choice of a suitable mount and frame, the importance of employing glass as free from specks and color is obvious. It is, however, not a generally or sufficiently recognized fact that the color of poor glass is quite sufficient to spoil the harmony of mount and print, not only by rendering both considerably darker, but also by imparting to both a very undesirable bottle-green tinge and throwing them entirely out of harmony.

By way of a postscript suggestion, it may also be added that there are certain tinges of commercial brown paper which, at times, are most valuable for mounting purposes; but, as the cases are comparatively rare, you may, when in serious doubt, most safely reject brown paper as the panacea for poor prints. Ordinary rough drawing papers, either coffee-tinted or colored with a pale water-color wash of umber, sepia, etc., are well worth serious attention and experiment.

PHOTOGRAPHY IN COLORS.

BY ROMYN HITCHCOCK.

IN the French section of the Exposition, in the gallery of the Manufactures Building, there was a small glass case on a square pedestal, in which a number of inconspicuous photographs in color, by Professor Lippmann's process, were shown. These were in charge of a very uncivil attendant, and whether any other and better examples of Professor Lippmann's work were hidden away, for the view of a favored few, I do not know. So far as this small exhibit was concerned, it was by no means so satisfactory as one might have reasonably expected to see, and indeed, the only specimen that showed clear and brilliant colors was the small spectrum photograph.

At a meeting of the Chicago Academy of Sciences, a number of very much finer pictures in color were exhibited, made by the Lippmann process as improved by Lumière, of Lyons. These were shown on a screen by means of a reflecting lantern, and the exhibition was truly a revelation in photography.

The method of preparing these photographs in color has been published, and need not be repeated here. The operations are simple enough, although the explanation of the physical phenomena involved in the production and fixing of color upon a plate is by no means easily grasped. Without treating at length this part of the subject, which is extremely interesting, I wish to add a few words in testimony of the fact, that enough has been shown to prove the entire practicability of photography in color. I mean by this, not that we can already go into the field and reproduce upon our plates a beautiful picture in all its colors to hang on the wall, like a work of art, but that it is possible to reproduce the colors of Nature exceedingly well by chemical processes, and that the first and most important step toward the production of such pictures has been successfully made. The Lippmann process is, unquestionably, a great step forward. The colors of Nature have been caught within the camera, impressed and fixed upon the sensitive film, developed in the darkroom, and they remain visible indefinitely in the light of day.

Nearly a century has passed since the first experiment of fixing light-colors. Many processes have been discovered which serve to reproduce more or less clearly the spectrum colors, but hitherto all such effects have been ephemeral, the colors quickly fading in daylight and more slowly in the dark. At last we have a means of fixing them. The Germans speak of *stehende Wellen*, as though the light-waves of the various colors were caught within the film and remained there, imparting their vibrations to the molecules which thus give out the corresponding colors. But this is not quite the correct idea. After development of a film which has been acted upon by white light, there will be an innumerable number of minute particles of silver distributed more or less regularly through the film. Such a photograph cannot possess any color. But, suppose, that instead of white light, we allow red or green, or blue light alone to act upon the sensitive film, and then develop it. Still it will show no color; for this is one of the oldest experiments, and it is familiar to everyone. Nevertheless, it is doubtless true, that the physical condition of the developed plate differs according to the color of the light which has acted upon it, because only those particles of silver bromide which are of such size and weight and sensitiveness that they can swing in unison with the vibration of the particular light-waves, will be acted upon.

Prof. Lippmann, as is well known, uses a bright, reflecting surface of mercury or silver, back of his sensitive films. The function of this is important, although not essential to success. Rays of light enter the film at an angle, pass through it, and come out again after reflection from the back. Under these circumstances, suppose we take green light and let it act upon the film. Ordinarily all particles of silver bromide which are sensitive to green light would be acted upon. But the conditions are somewhat peculiar. By reflecting the light at an angle from the back of the film, some of the reflected rays will come into interference with other rays reflected from the particles of silver bromide dispersed through the film. We may imagine the particles of silver bromide disposed in sheets or layers, parallel with the reflecting surface. Then there will be a great number of such layers at as many different levels, but among them will be some which are approximately $\frac{1}{2}$, 1, $1\frac{1}{2}$, 2, $2\frac{1}{2}$, etc., wave-lengths apart, for any particular color of light. There may be two hundred or more of these layers, in a film of ordinary thickness. The light reflected from these layers will reinforce that reflected from the bright surface at the back of the film, but all light reflected by the intermediate layers will be destroyed by interference of vibrations. Therefore, our developed film may be regarded as being made up of a series of parallel strata of reduced particles of silver, the distance between which is different for each color. That portion of the plate which has been exposed to green light will appear green after development, that exposed to red will appear red, and so on for every color. The general explanation of this fact is now obvious. Let a beam of white light fall upon the plate in the same direction as our green ray in the experiment. The only rays that could possibly be reflected in the manner above described would be rays of green light having the same period of vibration as our original green light. All rays having a different period would be destroyed by interference in the film. Therefore the color of that portion of the plate would be green. The same explanation applies to other colors.

Thus we come to understand, in a general way, how colors are fixed in the film by photography. We find here an exposition of the well-known fact, that the color of an object is due to the absorption of certain rays of white light and the reflection of others, the latter being the colored light from the object. In the case of a colored, transparent object, as a plate of red glass, for example, we say that it is opaque to all but red light. Just why the other rays are absorbed, or in some way prevented from passing through, it would be very difficult to say. But in the photographic film, in which the colors are fixed in the manner described, we approach a clear physical explanation of the color effects. We find that the minute particles of silver are so distributed in the film, that light of any color, entering the film at an angle, is reflected by these particles in such a manner, that the vibrations of certain rays are intensified or reinforced, while those of all other vibration periods are destroyed. It is the old class experiment of interference of light waves, carried on among the minute particles of the film disposed like thin plates. This, at least, is one of the hypotheses, although the conditions are far more complex than might be inferred from this simple presentation of the subject. What the future has in store for us we cannot now foretell. Experiment has not yet gone far enough to point out the direction of the coming improvements in the process, which shall make it available wherever a camera is used. The coming generation may make its photographs in the colors of Nature. We must be satisfied for our time with black and white, except in the laboratory of research.

BRUSH DEVELOPMENT OF BROMIDE PRINTS.

BY J. HELDMANN.

THE use of the brush during development has often been recommended for the local application of accelerator or restrainer, and in this direction it doubtless may be made of considerable service. Where, in interiors, it has been found impossible to avoid the including of windows, and when no precautions have been taken to prevent halation, the application of a solution of bromide of potash to the considerably over-exposed portions will often save the detail in these high lights. On the other hand, detail in the densest shadows may be brought out by gentle wiping with a brush charged with a solution of sodium carbonate. But it is in the development of small contact bromide prints that the brush will be found to be a most useful piece of photographic apparatus. By its use it is possible not only to accelerate and retard, but to produce the most delicate vignettes. The average amateur is usually not the possessor of an expensive background, and oftentimes the president of the household strenuously objects to the suspension of a newly laundered sheet upon the dirty garden wall. The resulting picture, printed as is, cannot be called artistic, for the ugly background forces itself to the front in a manner most objectionable. By the aid of the brush, the figure and such of the background as may be desired is readily brought out, and the rest either discarded entirely or dimly suggested. In landscapes the entire picture may be developed by the brush with intelligent forcing of some parts and restraining of others, or an oval or other shaped vignette produced. The vignette is not a sharp ending of the image, but a gradual falling off in density, superior to any that can be obtained upon bromide paper by using vignetting papers.

The paper is printed in the ordinary way in the printing frame, the sensitive side being known by the tendency of the paper to curl inward on that side, or by its adherence to the moistened finger. The exposed print is laid in a tray somewhat larger than the paper used, so that any surplus developer may not rest in contact with the print. Water is now poured into the tray until the print lies quite limp, and then poured off. The developer, preferably hydroquinone, is made up as usual, and the graduate containing it is placed so as to be handy to the operator. The developer recommended by Albert Hindley answers very well. Two solutions are made up—

H.

Hydroquinone.....	120 grains.
Citric acid.....	60 "
Potassium bromide.....	30 "
Sulphite of soda.....	2 ounces.
Water.....	26 "

S.

Sodium carbonate.....	60 grains.
Caustic potash.....	60 "
Water.....	16 ounces.

Use 1 part of H to 2 parts of S. The picture comes up slowly, and is perfectly under control. This developer and method I have used for a considerable time and with success. Anthony's heavy smooth bromide paper has given the best results.

The brush used is a 1-inch hard rubber bound camel's-hair duster, well washed and rubbed to remove any loose hairs. After use the brush must

always be thoroughly cleansed. A good idea of the position of the desired portion of the picture is obtained from the negative, and this part of the paper is lightly dabbed with the brush, the tray being held at an angle of about 30 degrees from the table. As soon as a trace of the image appears, the brush is moved in the direction of the picture until the whole subject is faintly visible. The paper being wet, no hard lines are produced. Repeated application of the brush strengthens the image, and, if necessary, detail in the high lights may be brought out by touching only those parts. Light strokes around the subject will produce the vignette, and any desired shape may be obtained. After development, the tray is flushed with water and the print removed to the hypo bath. In this way many beautiful effects may be obtained, and many rather poor negatives may be made to yield plucky, brilliant prints. The method is as old as the hills, but apparently seldom used.

Mat-surface prints are daily becoming more popular, and the claims of our old friend bromide paper must not be overlooked. A cabinet print, vignetted by the brush, is hard to beat. Handsome transparencies may be made by laying the print, face down, upon a piece of warm glass, and rubbing over the back with a lump of white wax.

TRIMMING AND MOUNTING.

BY EDWARD B. MILLER.

THE trimming and mounting of prints are important details in the making of photographic pictures. Though usually regarded as tedious operations to be put through as expeditiously as possible, they are not merely mechanical, for effective results depend very much upon the care and taste exercised at this stage of the work. No single rule for trimming and mounting can be laid down to apply equally to all of the many kinds and brands of printing papers. Most of them are managed easily by the "wet method." By this is meant that the prints to be mounted are either taken directly from the final washing water, or, if dry, are resoaked in water. Albumen prints are in best condition for mounting when they come from the final washing. They can, it is true, be dried, laid aside until a more convenient time, and then, by placing in water again, be made limp enough for handling. When prints are dried before mounting they should be kept flat, and the drying be done between blotters; they should never be rolled, as the film is very liable to become crack-marked. I have tried to mount albumen prints "dry," that is, by applying the paste to the back of the dried prints, but was never wholly successful. The prints would curl and become almost unmanageable, and when, after a considerable loss of time and a severe test upon patience, they were finally placed upon the mounts, the edges and corners had to be touched up and coaxed a good deal before they would stay down.

Gelatine papers, including the aristotypes and bromides, should have the films hardened if they are to be mounted "wet." This is easily done. A little alum in the fixing bath will do the hardening for bromide prints, and the combined toning and fixing solutions for aristotypes usually contain a sufficient quantity of that substance to give this desired result. Some brands, however, seem to have a greater tendency to soften than others. For such, an extra alum bath is necessary. These papers may be mounted "dry"; in fact, that method

is recommended by some manufacturers. My own experience leads me to prefer the wet method most decidedly. If the surfaces have been given the glacé or enamel finish, the special instructions for mounting them contained in the "Direction Sheets" accompanying the papers should be followed.

Collodion prints, American "Aristo," and other brands should be mounted wet, and directly after the final washing. They cannot be properly mounted dry, and will not become limp and pliable enough by resoaking, unless again softened. Platinotypes and kallitypes behave much like albumen prints when the paste is applied to them in the dry condition. They should, therefore, be soaked in water.

The trimming of prints should be done with a view to bringing out the best values in a picture and showing it off to advantage. It is a mistake to keep all prints as nearly as possible to the full size of the plate. A good subject may be greatly marred or positively spoiled by careless or injudicious treatment in trimming. To illustrate this detail of the picture-making process, a few examples from 5 x 7 negatives will be given.

The first is a view at "Tuxedo (N. Y.) Village." The foreground is a great vacant square; it is flanked by the quaint-looking stores building; the left is balanced by some buildings in the middle distance, and these are passed by the highway as it recedes and is lost in the distance; the sky is cloudless, pure white. If this print were trimmed to its full limit, the picture would present the appearance of having slid down to its lower part. The greatest height of the subject proper is but $2\frac{1}{2}$ inches; above that, in the negative, are nearly $2\frac{3}{4}$ inches of sky; just about two of those inches are useless and injurious. The finished print is trimmed down $6\frac{1}{2} \times 1\frac{7}{8}$ inches; the open square is emphasized thereby, and the several objects in the picture are given proper value. In the second example, "A Ramapo Landscape," every object of interest is included within $6\frac{1}{2} \times 4\frac{1}{8}$ inches.

The knife should be applied to widths as well as heights. "The Ramapo," in its full dimensions, carries with it about $1\frac{1}{2}$ inches of unattractive features on the left side; $5 \times 4\frac{1}{4}$ inches make a picture of it.

Uprights of landscape subjects, as a general thing, need all the width they can get and not infrequently can stand some cutting down in height. Another view of "The Ramapo" illustrates this point. The river, shallow and rocky, overshadowed here and there by dense clumps of sumach and elder, and winding away from the distant hills, is the principal object, claiming the greater proportion of space. The print is $4\frac{1}{4} \times 4\frac{5}{8}$ inches; only about $\frac{1}{4}$ inch being allowed the sky. "Sloat House," though an object of interest, is of little artistic account. It will do very well to show how such a subject can be treated with good effect. The house itself covers but a small space upon the print, and just in front of it stands a great oak tree. The photographer was greatly annoyed by that tree, but as no one offered to remove it, he had to make the best of it. So the tree was photographed in nearly its height and so it is allowed to remain upon the print. Some may question the propriety of the title "Sloat House," but the photographer is satisfied that he treated the subject to the best advantage and trimmed the print about right.

Life subjects require a little study before the trimmer and rule are applied. "Patient Toilers," a team of oxen drawing a mountain wagon, at first glance appeared about right upon the full-sized print, but after a more critical look

a little strip was clipped off each side, then another, and another until $4 \times 4\frac{3}{4}$ inches remained. Those clippings brought out "The Toilers" to decidedly better advantage. "Children of the Mountain," Master Sambo and his sister, are given $4\frac{1}{4} \times 6\frac{1}{4}$ inches, in order to take in the lower foliage of a tree under which they posed. "Carpenters," a group of youngsters at play upon the staging at a shop entrance, are placed within $4\frac{1}{2} \times 3\frac{1}{4}$ inches, and there still remains ample shop for the "setting." "Marian," a full portrait of a one-year-old niece, measures $1\frac{3}{4}$ inches from crown to toe; the print is cut $2\frac{1}{8} \times 3\frac{5}{8}$ inches.

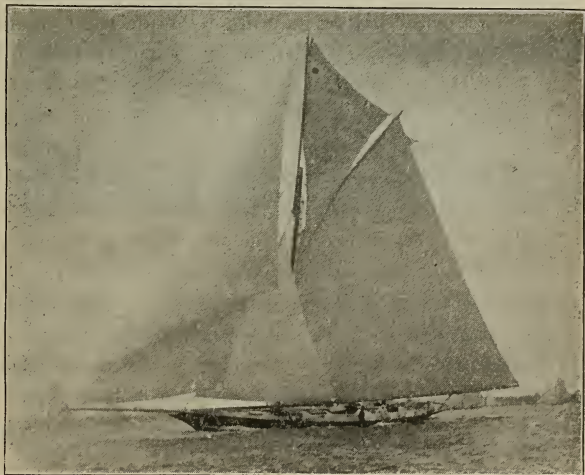
In the preceding examples the edges are cut at right angles to each other, and that is unquestionably the proper way of trimming. I once attempted to rid an upright landscape of a defect away up in one of the corners by trimming away both corners at a slight bevel. I am not yet convinced that the picture is ruined by it, though such is the belief of many critics.

(To be continued.)

CLOUDS.

BY FRANCIS P. SMITH.

THERE is an old proverb which sets forth with considerable terseness the fact that when the mountain would not come to Mahomet, this somewhat notorious individual went to the mountain. So it is with many of our photographers; they want clouds in their pictures, and as they usually fail in getting them there with a single exposure, recourse is had to double printing and the use of a specially prepared cloud negative. The desirability of clouds in a photograph is generally admitted, and a glance at the medaled pictures in the photographic exhibitions of the present day show that both the exhibitors and judges are keenly alive to their importance from a pictorial standpoint. It has been urged by a few that clouds are by no means necessary in Nature to the production of a pleasing and well-balanced picture; but those making this claim seem to be oblivious to the fact that photography in colors is by no means *un fait accompli*.



Even granting that a foreground in monochrome may be artistically equal to one in color, the fact that the ordinary photograph represents the high light of the sky as a glaring white, or, if purposely kept thin, a somewhat disagreeable monotonous expanse, tinted uniformly anywhere from a brown to a purplish black, entirely robs the picture of the character given to it in Nature by the soft,

clear background of deep blue. The contrast of color subdues the high light and does not rob the delicate gradations and half-tones of the picture of their true value. The use of cloud negatives in special cases is defensible ; but, unless care is taken in selecting them, the result may be very unpleasing, and often incongruous. To have the light on the clouds coming from a certain direction, while that of the picture comes from an entirely opposite one, is a fatal mistake which has frequently occurred. The negatives so used should represent a section of the heavens of about the same distance from the horizon as the blank space which they are intended to cover in the picture which is to be thus doctored. In the case of a subject which embraces considerable still water, it will be very difficult to secure the necessary reflection. Much has been written upon how to obtain the clouds in the original negative of proper printing density. Some workers advocate the use of orthochromatic plates with or without screens, others sing loudly the praises of their pet cloud shutter, while still another pins his faith on a certain wonderfully compounded developer.

Without going very deeply into the merits of any of these special devices, it will be well to recognize the general conditions which confront us and offer in a certain sense a bar to the accomplishment of our desires.

In the first place, the blue of the heavens is an extremely actinic color, or one to which the plate is very sensitive, while the ordinary browns and greens of the landscape are much less active in this respect. In addition to this, the enormous amount of reflected light renders it a very difficult matter to give the foreground sufficient exposure without hopelessly blocking up the sky. The function of a screen and an orthochromatic plate is to render the plate as far as possible sensitive to the actual amounts of light given off by the various parts of the picture independently of its color. While this lessens the difficulties to be contended with, it does not change the fact that the sky still reflects far more light than the rest of the picture. Just here the cloud shutter comes into play. Theoretically, it is so constructed as to give the foreground the greatest exposure. This may be accomplished in several ways, the mechanical details, however, being foreign to the purpose of this article. Next comes the consideration of the developer, and, regardless of the fearfully complicated formulas under which it may be compounded, its object is to bring out detail without sufficient density to clog up the high lights of the sky. In the hands of different workers all these methods vary in the results obtained, and it has occurred to the writer that if it was legitimate to select the view, it was also perfectly admissible to select the day. Even with the most approved appliances it has frequently been a hopeless task to attempt to secure light, fleecy clouds on a clear, bright day. They are usually white ; so is the photographic rendition of blue in nine cases out of ten, and the effort to make them well defined on such a background is simply heartrending, to say nothing of the profanity it sometimes invokes.

If, on the contrary, a day in which the sky is entirely obscured by clouds is chosen, the difficulties are much more easily surmountable. The light is then generally well diffused, and charming atmospheric effects are obtainable, as witness many of our early summer and fall days. The pictures with which this article is illustrated were taken on just such a day with a moderate wind blowing, the occasion being a Fourth of July regatta at the Larchmont Yacht Club. On the land an instantaneous picture would perhaps have been slightly straining

the point, but here the water reflects light almost equal to that from the sky, and no excessive exposure of the foreground is necessary. In other words we have an ideal condition which isochromatic plate, cloud shutters and screens, fail of themselves to produce in anything but an imperfect manner. The sky is gray, the water reflects its tint, and by avoiding the highly lighted side of the yacht, the illumination comes very near to being equal all over the subject, while sufficient life is given by the movement of the waves.

A few notes regarding apparatus, plates and developer used may be of interest. The camera employed was a Kamaret, with Taylor, Taylor & Hobson lens; the diaphragm about $f/16$, and the speed approximately $\frac{1}{50}$ second. The standpoint of observation was a naphtha launch, and the art of balancing oneself and avoiding a thorough soaking of the camera as you strike a head sea is one which only sad experience will ever teach. In a case of this kind the lens should be protected to avoid briny tear drops which would otherwise mar the perfection of the picture. The finder should be of sufficient size and good illumination, and by all means have the shutter release in close proximity to it. A sudden lurch often brings the subject in the correct position on the plate (but more frequently throws it and the photographer completely off their bearings), and you don't want to take your eye off that finder for even one second to hunt for the "button." It is all well enough to say keep your hand on it, but the exigencies of balancing under such conditions know no such rigid laws. To the scientific mind the wild desire to keep the center of gravity in



a position of stable equilibrium is uppermost, while the ordinary worker tries to keep his feet with similarly unsuccessful results, and the task of chasing that button is entirely too much to attend to while keeping the camera pointing properly.

While yachts are passing in rapid succession the plate-holders must be so disposed that they can readily be gotten at and changed. For this reason a simple opening in the side of the camera is preferable to a door which has to be open and shut each time. These are points which come home vividly to the worker, however, and only one more need be touched upon: Don't go in a big steamer or you will never get near enough to the boats to get a picture of respectable size and proper lighting.

To return once more to the illustrations, the plates used were Seed's 26 x and the developer para-amidophenol. A developer of this class seems to the writer to be preferable, as the deposit of silver on the negative is a blue black and not so opaque as with some of the other well-known reducing agents. The danger of blocking up the shadows is hereby lessened, and we do not get a yacht floating 'twixt sky and sea in a background and foreground of formless white with no horizon visible.

(To be continued.)

JOTTINGS FROM GERMANY.

WITH the beginning of the new year, several changes have taken place among German publications. The *Photographische Wochenblatt*, in Berlin, has lost its former editor, Dr. A. Miethe, whose place has been taken by Herr J. Gaedicke. The *Photographische Nachrichten*, heretofore the organ of the "Photographische Verein," in Berlin, and edited by Director D. Schultz-Hencke, has ceased to exist, and in its place a new journal will be published by W. Knapp, in Halle, a/S., under the editorship of Dr. A. Miethe. A journal called the *Praktische Rathgeber für Amateur Photographen* will be published by Hugo Peter, in Halle a/S., under the auspices of thirty German and Austrian amateur photographic societies, with about 1,400 members.

The *Photographische Rundschau*, of Vienna, the former organ of the "Amateur Club" (at present Camera Club), is now an independent paper, edited by Dr. R. Neuhaus, in Berlin, Herr Charles Scolik, the former editor, having retired. The Camera Club will have a paper of its own under the name of *Wiener Photographische Blätter*, published by R. Lachner, in Vienna. In Munich will appear, from the 1st of January, the *Medico-Photographische Zeitung*.

Stripping of the Film. The general work of stripping the negative film from the glass has the disagreeable effect, that the dimensions of the film are apt to change, and this is the case even when hydrofluoric acid is applied. Dr. Ed. Liesegang recommends the following as a preventive:

Lay the negative horizontally upon a level support and flow the film side with a plain collodion of $1\frac{1}{2}$ per cent. After coagulation of the collodion film, but before it has become entirely dry, put the plate in a bi-chloride of mercury solution, to which have been added a few cubic centimeters of alcohol under thorough shaking. After the plate is sufficiently impregnated, it is washed in running water and then is placed into a tray of pure water. The film is carefully lifted at one of the corners and stripped without stoppage. The stripped film is put in a fixingsolution, in which it will obtain its original strength again. It is then washed and spread upon an even surface until completely dry.

Dr. KRUGENER writes on the prevention of curling in collodion papers, suggesting the treating of the back with a resinous coating, and adds an elastic medium to the emulsion, to prevent tearing and peeling. He adds citric acid to the emulsion and also applies it to the back to prevent the yellowing by age.

CARE should be taken in the use of glycerine as an addition to the oxalate bath in the development of platinum prints. The commercial glycerine often contains acids and should not be used or no picture will result, the iron salts being affected by the acid before their effect on the platinum salt is rendered visible.

VOLUME VI of the "International Annual" is making many friends in the old fatherland. J. Gaedicke, the present editor of the *Photographische Wochenblatt*, speaks in the highest terms of the new publication. He says: "It is a brilliantly embellished volume, containing many interesting articles."

Herr HEIDVOGEL, of Vienna, writing on the spotting of dry plates by moisture, recommends for their removal rubbing with castor oil. The action of the moisture, which shows itself in an irregular swelling of the film, will not be arrested by this process, but the defect is so far removed as to not show in the print.

Dr. EDER publishes the results of experiments with thiocarbamid in connection with fixing, and finds that it acts as a preventive against yellow negatives. A pyro-developed negative covered with green fog was immersed in the following solution:

Thiocarbamid.....	10 parts.
Citric acid.....	10 “
Water.....	1,000 “

In a short time the yellowish green color disappeared. If thiocarbamid is added to the fixing bath, it prevents the formation of green fog on plates and bromide papers, but the bath must be acid.

The following formula is recommended :

Hypo.....	200 parts.
Thiocarbamid.....	10-15 “
Water.....	1,000 “

To this is added 50 parts of bisulphite of soda. Both plates and papers must be thoroughly washed before fixing in this solution.

Das Atelier des Photographen is the title of a new photographic journal, which made its first appearance at the beginning of this year. The first number, a fine specimen of technical excellence, is in our hands, and under the management of such an able editor as Dr. A. Miethe there is no doubt that it will have a successful career and become one of the leading journals in Germany. Herr Wilhelm Knapp, in Halle a/S., is the publisher.

Messrs. Dr. MIETHE and Dr. HESEKIEL have worked out a new method according to which so-called half-tone pictures can be produced without the use of a screen plate (ruled glass). In place of the same they make the original positive upon a specially grained paper, and reproduce the same in a direct way by oblique light without a screen. A screen negative will thus result, after which a relief plate can be etched. The foregoing gentlemen have applied for a patent in Germany.

Herr KYRKOW, director of the Bulgarian Government printing offices in Sofia, showed at the meeting of the Vienna Photographic Society samples of zincotypes and printing plates which had been made by a modified process. The ordinary method of the zincotype process is combined with that of the asphaltum process. Herr Kyrkow uses sulphurized asphaltum (which he dissolves in benzole) and puts a thin coating on the mat zinc plates. The color of the coating must be a golden yellow. After an exposure of four minutes in the sun, he obtained good prints. For the developing of the same he recommends French or Neustadt oil of turpentine; for over-exposed pictures, “Russian oil.” For etching, he applied 1 per cent. nitric acid, also phosphoric acid and chro-

mic acid solutions. The advantage of this process is said to lie in the application of the asphaltum.

COMMENTING on the toning of pictures on albumen, salted and collodion papers in a platinum toning bath, R. Quednan says that, according to tests made by him, the platinum process furnishes the best results in separate baths, and that a combined toning and fixing bath can only be used with salted paper with equally good results. Further, that collodion papers are not so suitable for platinum toning as albumen and salted papers, as the former will always show a certain olive tint. The silver platinum pictures so obtained did not change in the light after keeping them for several weeks.

WRITING of the "International Annual," Volume VI, Dr. Vogel remarks: "The publishers have secured a number of eminent American and European authors as contributors, and the book is embellished with many magnificent illustrations. We recommend it highly to every one conversant with the English language."

FOR the preparation of canvas for enlargements which are to be finished in oils F. Silas recommends the following method: Wipe the canvas with a wet cloth, and when again dry brush it over with the following solution:

Sodium chloride.....	4.5 parts.
Gelatine.....	0.4 part.
Acetic acid.....	10 drops.
Warm water.....	310 parts.

When the surface is dry, sponge over with an ammoniacal solution of nitrate of silver. Repeat this, and the canvas is ready for printing. Wash and fix in hypo.

THE first number of the *Wiener Photographische Blätter*, the present organ of the Vienna Camera Club, and published by the same, has appeared. Its technical execution is excellent and leaves nothing to be desired, and we hope that the new journal, under the able editorship of Professor F. Schiffner, will have the same success as the former organ of the club, the *Photographische Rundschau*.

SCHUMANN gives an account of a simple and conclusive test of the sensitizing action of gelatine on bromide of silver. A sheet of plate glass was leveled, half of it coated with a 1:50 solution of gelatine, so that the division was straight and distinctly marked. This plate was then placed in a flat dish in which bromide of silver in a very fine state of division was suspended, and the bromide allowed to precipitate itself. The plate was dried and exposed to the spectrum, so that the spectrum was cut longitudinally by the dividing line of the gelatine. On development it was found that the part without gelatine had a very short and scarcely visible spectrum, while the part coated with gelatine showed a broad, extended spectrum. Under the microscope it was also recognized that where the gelatine was thin, the sensitiveness was not so great.

MANY brands of plates especially prepared for lantern-slide work have been at the photographers' disposal for a long time, and the majority of present-day photographers being either entirely unfamiliar with the collodion process, or so situated that the requirements of this latter process cannot with comfort be met, it is probable that the dry plate will remain the most universally employed. Indeed it is to be doubted whether the adherence to the idea that the wet process yields the more superior results is altogether due to its special adaptability for this work. The many pleas in its favor may in part be due to a deep-seated prejudice in its favor in the minds of our older workers. True it is that the highest excellence is possible with the commercial lantern-slide plate. Indeed, several comparative tests, involving every point, have been made by the Photographic Section of the American Institute, particularly by Professor Laudy and D. L. Elmendorf, slides made by the two methods being exhibited side by side. The many experts present have invariably failed to correctly discriminate between them.

Perhaps the easiest method of obtaining lantern slides is by the contact method, in which the lantern plate is exposed to light behind the negative in the printing frame. This method has its limits and its disadvantages in that absolute adjustment is not easy, and particularly because only a small portion of the negative can be included in the slide. Even with a 4×5 or $3\frac{1}{4} \times 4\frac{1}{4}$ negative, much of the general effect of the picture may be lost by this curtailment. The claim is also made that a better slide is always obtainable by reduction, and this to a certain extent must be conceded.

The printing frame for use in this work must be a good one, with an even rabbet to prevent breakage of the glass under the extra pressure, and a tongued joint in the back to keep out any stray light. The lantern plate and negative are, of course, placed film to film, and the former adjusted to include the desired portion of the picture. Particles of grit will scratch both films, hence careful dusting of both plate and negative with a camel's-hair brush should not be omitted. A piece of black felt is laid over all and the back of the frame adjusted, care being taken that the placing of the springs in position does not move the lantern plate.

The source of light may be daylight, gas, lamp, magnesium ribbon or flash. The latter two are hardly satisfactory, and the ordinary photographer will use either oil or gas, both very good sources. Daylight, being inconstant, is best avoided. A lamp having a side door or removable front will be found a convenience. The time of exposure will, of course, depend upon the plate used, the density of the negative, the source of illumination and the distance of the frame from that source. The lantern-slide plate being coated with a slow emulsion, some few seconds' exposure may be given at a distance of about 2 feet from the flame. One trial will usually furnish a key to subsequent exposures. Under-exposure should be avoided, as giving rise to objectionable snow-like effects. Indeed, in order to get the best possible slide, it is necessary that the negative shall be of the best quality and that the exposure shall be correct.

The developer used will influence the tone of the slide. Much has been

written against pyro as a lantern-slide developer, but for a slide of good, warm tone and maximum detail, there are few better developers. The ferrous oxalate developer is but little used in this country, the majority preferring hydroquinone for the production of velvety black slides. Willis Dodge, in "The International Annual," Vol. VI, gives the following formula :

Hydroquinone.....	8 grains.
Carbonate of soda.....	$\frac{1}{2}$ dram.
Sulphite of soda (crystals)	1 "
Water.....	8 ounces.

This will develop some eight to ten slides without renewing. As for development itself, hard and fast rules are impossible. Judgment is necessary just as in the development of negatives. The production of detail in the high lights, with transparency in the shadows and general freedom from veiling, are the objects to be aimed for. Many dodges offer themselves for use during development, and are applicable when very hard negatives are employed. Some more detail may often be brought out in obstinate parts by warming these places by breathing upon them. Again, application of potassium bromide or of carbonate of soda by means of a soft brush may be resorted to, to keep back or bring out shadows or detail.

The developed slide is fixed in clean hypo solution, thoroughly washed, carefully rubbed over with a wad of wet absorbent cotton, and allowed to dry.

Much has recently been said and written on the propriety of aiming for absolutely clear skies and of using slow plates. H. J. Newton has shown very fine slides made on the quickest plates obtainable, and artists who have seen them have lauded them for their artistic merit. It would seem that there is no more reason for a vast white expanse of sky above the landscape in a lantern slide than there is for its presence in a print. We endeavor to insert suitable clouds and sky effects in the latter; why not in the former? And if such cloud negatives are not obtainable, surely a flat, gray tint would, in many instances, serve as an admirable substitute.

SEVERAL very interesting lantern slides have been shown to us by Mr. John Carbutt, made from negatives taken by his son, Mr. J. E. Carbutt. One of the most interesting is of the Relief Group of the Greely Arctic Expedition. It is a wonderful slide. Others are of the illuminations at the World's Fair, and will doubtless form part of the interchange collection alluded to elsewhere.

To estimate the quantity of gas in a cylinder the following directions are given : Multiply the pressure by the size, and divide by the pressure at which it contains any given quantity, when the quotient will be the answer. Example : A vessel contains 20 cubic feet at 120 atmospheres; the pressure is, say, 45; multiplied by 20, equals 500, which, divided by 120, equals $7\frac{1}{2}$ ($45 \times 20 = 900 \div 120 = 7\frac{1}{2}$ cubic feet).

THE American Lantern Slide Interchange intends to gather together a collection of lantern slides thoroughly representative of the buildings and events at the World's Fair. The American amateur photographers may engage in this work with no little pride. This special set of slides will be circulated among the clubs of the Interchange, and, later, will be sent abroad.

GAS CYLINDERS FOR LANTERN WORK.

PROFESSOR GOODMAN, of the Yorkshire College, England, as the result of his investigations into the cause of the oxygen cylinder explosion at Bradford, makes the following recommendations:

(1) That oxygen cylinders should only be made of mild steel of the best quality, having a tensile strength of not over 32 tons per square inch, with an extension of not less than 20 per cent. on 10 inches, and that the carbon should not exceed 0.2 per cent., and the iron should not be less than 99 per cent. (Best Yorkshire iron might probably be even more satisfactory for making cylinders than mild steel.)

(2) That all cylinders should be thoroughly annealed at a cherry-red heat, both when new and afterwards, at stated intervals.

(3) That greater care should be taken in the manufacture to ensure a more even thickness of metal in the body of the cylinder.

(4) That the stress in the material should not exceed 6 tons per square inch, *i. e.*, the thickness of the metal in the thinnest place should not be less than one-fifteenth of the inner diameter of the cylinder.

(5) That the high-test pressures now adopted should be reduced. The demand for such high-test pressures encourages the use of steel of very high tensile strength, with its corresponding hardness and brittleness and general unreliability.

He adds that there is not the slightest necessity for nervousness about sitting near them while lantern lectures are being delivered. When it is remembered that several hundred thousand of these are in regular use and that the number of accidents is practically *nil*, it will be recognized that the risk attached to their use is extremely small. The Brin Oxygen Company, we understand, will re-anneal all cylinders sent to them for refilling.



PHOTOGRAPHY IN NATURAL COLORS.

BY E. VALENTA.

A VERY necessary condition for Professor Lippmann's experiments is the continuity of the film on the plates used. If the production of color is to be successfully accomplished, the diameter of the grain of the silver precipitate must be extremely small in comparison with the wave-lengths of those colors that it is desired to reproduce. With bromide of silver gelatine plates this is obtained by mixing the nitrate of silver, dissolved in the gelatine solution, with the bromide of potash or ammonium, also dissolved in gelatine solution, at as low a temperature as possible, the emulsion being poured out rather rapidly. These emulsions give very handsome color effects, but are extremely non-sensitive in comparison with ripened bromide of silver gelatine emulsions, requiring, in consequence, a much longer exposure when used in the camera. It is the aim of the photo-chemist to remove this latter defect.

I have been occupied with the study of this subject for some time, endeavoring to find out how far the sensitiveness of bromide of silver gelatine emulsion may be increased by ripening without injury to the brilliancy of the colors, and have made the following experiments in connection with the sensitometer.

If a solution of 10 grams of gelatine, 5 grams of bromide of potassium and 300 c. c. water, at about 38 degrees C., is mixed with a solution of 10 grams gelatine, 6 grams nitrate of silver, and 300 c. c. of water, an almost clear, faintly opalescent liquid is obtained, which contains the bromide of silver in such a finely distributed condition that it could be considered more a solution than an emulsion. This solution gives, if plates flowed with this emulsion five minutes after mixture, and washed after setting, are exposed in a Warnerke sensitometer for five minutes to the influence of the light of a Siemens fifty-candle burner, at a distance of 50 cm. from the sensitometer, hardly 1 degree of the sensitometer mark; but by corresponding treatment with color sensitizers, and with the same emulsion, plates are obtained, which admit of a very brilliant color reproduction. I have now submitted this emulsion to a ripening process by digestion at a higher temperature, and have found that the ripening proceeds pretty quickly, even if the emulsion is digested in the water bath at the low temperature of 38 degrees Cent. If treated this way emulsions are obtained after half an hour which make a color reproduction still possible, but where the blue of the spectrum picture is now imperfectly rendered. Besides this, the colors do not appear as brilliant as when the emulsion was poured out immediately after mixing, in the completely unripe condition.

Sulphite of soda acts as a sensitizer, increasing the sensitiveness of the plates considerably, if to a bromide of silver gelatine emulsion made in the above-mentioned way, 1 gram sulphite of soda is added to each 300 c.c. If digested with the same for a short while, the emulsion remains clear, but the plates produced with the same show almost double the sensitiveness in comparison to those which were produced without this addition.

We have, therefore, in the sulphite of soda a medium for increasing the sensitiveness of the gelatine plates for the Lippmann process, without the formation of a coarser grain.

I have also studied the influence produced by an addition of sulphite of soda during the ripening of the emulsion under the above-mentioned circumstances. For this purpose I have made an emulsion in the above-described manner, the sensitiveness of which was very small, and this I let ripen, as described, by adding 1 gram sulphite of soda to each 300 c.c. emulsion at 38 degrees Cent. Specimens were made after five, fifteen, thirty minutes, one and two hours, and it proved that this addition has a retarding influence upon the coarser formation of the grain. The plates, with the emulsion ripened for five minutes, gave a sensitometer mark of 4 degrees Warnerke while after one hour 18 degrees Warnerke had been reached. In my attempts to produce colored pictures with the aid of the spectrograph, it was shown, that the emulsion which ripened five, fifteen and thirty minutes, was still useful, while with the same emulsion which was left to ripen without the sulphite of soda addition, the brilliancy of the colors had suffered considerably, and the grain was much too coarse.

Finally, I may add, that with chloro-bromide of silver emulsion, which was produced with an excess of soluble chloride, I have obtained very handsome effects in the production of photo-chromotypes (spectra), whereby the time of exposure was somewhat shorter than with pure bromide of silver, and the effect of the color sensitizers proved of more value.

THE WASHING OF PRINTS.

BY R. ED. LIESEGANG.

IN the washing of silver haloid films that have been fixed in hypo, the exact moment when this washing is sufficient cannot be accurately determined. One person will change the water but ten times and yet remove perhaps as much of the fixing salt as another who makes twice this number of changes. It is very necessary to effect at each change the entire removal of the washing water, which is practically simply a dilute solution of hypo. If a stream of water passes for a day through an imperfect washing box, the elimination of the hypo is not as complete as after half an hour's washing by another method—the removal at intervals of all adhering liquid by squeegeeing the prints upon glass or between blotters. The exact method of working cannot be given, for it varies with the kind of paper used—albumen, collodion or gelatine. Manufacturers do not put on the marked ready sensitized cardboard, which would save the trouble of mounting, because they cannot guarantee the absolute removal of the hypo, and, hence, their durability. The multiple-coated non-halation plates suffer for the same reason.

I have endeavored to find an indicator to show visibly that the washing is complete or not. If a soluble coloring matter that colors paper but is removable by washing, is added to the hypo bath, the best proof of the removal of the hypo is that the paper, by repeated washing, becomes colorless. This test is more simple and reliable than chemical tests.

The aniline coloring matters are the most suitable, though only a few can be used. They must not suffer change when brought into contact with hypo, nor must they exercise any injurious effect upon the silver print. Even these two exceptions do not cover the entire ground. For instance, erythrosine colors the paper too much, and even very prolonged washing will not remove it. An addition of .02 per cent. of eosin to the ordinary hypo bath or to the combined bath I find to be by far the best for prints. The washing was complete when the red coloration disappeared from the back of the print. I have as yet failed to observe any injurious action by the eosin upon either paper or hypo.

I have also tried fluorescin, judging of the washing by the presence or not of fluorescence in the water. The tenth washing water was still fluorescent. This is not so good as the eosin test.

PHOTOGRAPHING ANIMALS.

BY H. FOURTIER.

THE attention of the amateur world (I say amateur without having an exact definition to offer, and I regret very much that the proposition presented by my friend Bucquet in the last congress did not meet with the sanction it deserved, and until the question comes up again, for it certainly must come up once more, I will call amateurs those who practice photography as a pastime, and not as a business pursuit)—the attention of the amateur world I was saying—is greatly preoccupied with portraits and landscapes, and is very seldom attracted to the art of photographing animals. And yet we may here find quite a number of interesting subjects worthy of our study, not with a view to obtaining those wonderful instantaneous pictures which present nothing pleasant to the eye, but for obtaining artistic results. I have written this word artistic, and feel almost tempted to

take it back, for there is at present an extraordinary tendency—I was going to say a veritable rage—to practice exclusively what is called artistic photography.

Now, after having carefully read all that has been written upon the subject at home and abroad, after having looked at works recommended to me as the highest exponents of the art, I have only been able to understand one thing, and that is, that a work is artistic only when it satisfies our eyes and mind, and that the purity or uncertainty of the lines have nothing to do with the thing. Besides, this word art has acquired a wonderful elasticity, and hardly a day passes without our own eyes meeting such a phrase as this : “ We regret to announce the death of the celebrated sausage vender, X——, who was a master of his art,” etc. ; and why not ? If, with his well-seasoned sausages, he knew how to awaken new and pleasant sensations, why should he not also exclaim, “ I, too, am an artist ” ?

The reader, perhaps, may think that I am wandering away from my subject. I will show him that I am not. Photographing animals is in practice an easy thing ; it is an art—another twisting of the word—to manage the posing of these difficult subjects. To make them adopt a natural posture, and to catch them in their normal conditions, while they are unconscious of our intentions, is a difficult problem. If there are some, like sheep or oxen, sufficiently tame to be allured easily into any possible poses, a fact to which we are indebted for this avalanche of “ Cows at the Trough,” “ Oxen on the Prairie,” “ Sheep entering the Stable,” there are others, on the other hand, even among those that familiarly associate with us, like the dog and the cat, that stoutly refuse to surrender themselves to the photographer, or to restrain their natural impulses and adopt the necessary position. If you attempt to photograph them with the aid of magnesium, the pupils of their eyes acquire an awful luster, their skins appear disfigured by the violent rays of the light, and the result is altogether pitiable. The subtlest diplomacy is necessary to make them accept this rôle of photographic subjects. An incredible quickness of action is indispensable in order to seize the right moment when the posing is expressive enough, and to work the shutter.

But this study of animals by means of photography should, above all, be scientific. To make them adopt an unnatural posture, contrary to their habits, is to mistake the real object of these researches. A trained dog sitting on his haunches and painfully beating the air with his forelegs is, perhaps, a very comical sight ; but it is surely more instructive and agreeable to see him in his habitual mood and natural position.

Unlike the human being, animals of tender age are handled with comparatively little difficulty. They are more amenable to the photographer than children. While the crying, struggling and irrepressible baby exhausts your patience and even provokes your anger, the kitten and the pup, having a more gentle disposition, lend themselves more readily to your experiments than their elders ; the latter, perhaps, have become ugly through long contact with the human race, or, bouncing around you like dogs, they are only intent upon ingratiating themselves with you ; or, having learned to be prudent through experience, like cats, they curl themselves up and are afraid of your slightest motion.

The young animal, having a more confiding disposition, and reassured by your quiet demeanor, will quickly take up its gambols, and, while thus occupied, the kitten, dazzled by some familiar and shining object to which you may draw

its attention, will adopt before your lens one of those peculiar poses which reveals all the grace and subtlety of the feline race.

Do you remember those young and plump St. Bernard dogs of which M. Boissonnas took such cunning photographs which were published in the *Bulletin* of 1891? I doubt very much that those dogs, already grown up, would so readily lend themselves now to the same experience, adopting the poses so skillfully seized by the photographer.

I think that the Photo Club, whose earnest aim is to contribute to the advancement of photography, should some day organize an exhibition or contest exclusively devoted to animals. The thing has been successfully done in America, and, believe me, this is another artistic manifestation, and a good one.

I hold in profound esteem all landscape exhibitions and contests; but when such an exhibition only offers me the inevitable tree, bending down and weeping, like Narcissus, over its image reflected on some clear stream, I pass along, without experiencing any extraordinary degree of enthusiasm. If, on the other hand, another amateur shows me some picturesque ruins, I think less of the photographic processes, the photograph conjuring up forgotten scenes. "Ah!" said a friend of mine, a native of good old Champagne, before whose expanding horizons the objective seems to stop in stupid abstraction—"Ah! the landscape exhibitions! I have given them up. Nobody cares now for my tree, my stream and my cow! And I have mixed them up in all kinds of combinations!"

The continuous study of the same animal, on the other hand, may lead to interesting researches, to useful investigations, and I should be happy, dear reader, if these few lines, unpretentiously written, made you feel the ambition to become a photographer of animals and induced the Photo Club to attempt this singular exhibition, which would undoubtedly prove an immense success.—
Photo Club de Paris.

ENCOURAGEMENT.

THAT hard study and constant effort, born of a love for photography, will overcome all obstacles and land the enthusiast on the shores of success is demonstrated in the case of W. L. Minns, of New London, O. Some few years ago a child study was sent in to us for criticism, and the author was encouraged to further effort, the work showing considerable care and knowledge. Mr. Minns sends us three bust pictures and gives us a few details as to the obtaining of them. One we produce. He says: "The picture was suggested to us as the man sat in the superintendent's office, in the school building here. As I looked, the head was posed in a reflective attitude, the expression one of deep thought. The subject seeming one from which a lesson might be learned, I asked him to call at the studio. Our top light is only some 10



feet square ; side light, 8 feet high. Muslin curtains over all, with dark-brown curtains over part of the skylight. In the pictures sent, the side light was left open, the brown curtains were drawn over part of the skylight remote from the side light, with the muslin curtains covering nearly all the top light. A head screen, 3 feet above the head, softened the light on the face. Seated 6 feet from side light. Hair, dark red. Pyro developer."

Concluding, Mr. Minns says : "It may interest you to know that the whole picture was made by the once farmer boy who submitted a child study to you some years ago, and to whom you gave kind words of encouragement, through the BULLETIN, predicting his future success."

The reproduction is not equal to the original, but any comments, points of weakness or suggestions will teach a lesson and be productive of no little good.

OUR ILLUSTRATION.

STUDIO WORK BY MEACHAM & SABINE.

THE BULLETIN this month is fortunate in having for its illustrators Messrs. Meacham & Sabine, of Youngstown, O. Both appear to be young men, yet they have the advantage of many years' experience.



W. G. SABINE.



C. T. MEACHAM.

Mr. C. T. Meacham has been in business for fifteen years with such men as J. C. Horrington, of Massillon ; B. F. Battle, of Akron, and J. F. Ryder, of Cleveland, and, while being a good operator, takes entire charge of the finishing department. W. G. Sabine, his partner, has seven years of hard work and study in photography behind him, and has worked in large galleries in Canada and Buffalo. Mr. Sabine does the operating and supervises the dark-room work.

Our illustration is printed from the regular negatives made in the studio, and illustrates the high standard that is maintained in a first-class establishment. The operating-room measures 33 x 22, top light, 15 x 18, side light, 8 x 12.

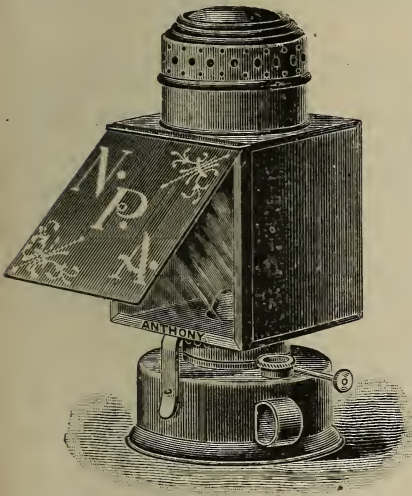
With regard to the paper used, Messrs. Meacham & Sabine write the following: "We have used American 'Aristo' paper for about five years and find it the most reliable printing-out paper on the market. It prints rapidly, giving wonderful detail, rich deep shadows and beautiful half tones, and its durability is unquestionable. We use the paper according to the 'Aristo' formulas sent out by the manufacturers."

IMPROVEMENTS IN APPARATUS.

As promised in the January number of the BULLETIN, we present our readers with a half-tone from a photograph of a recently painted Hetherington background. Such small reproductions can, of course, give but a faint idea of the delicate quality of these grounds, but will serve to give some general idea of their nature.



ONE of the cheapest and most handy lamps for the amateur is the N. P. A. lamp. The cut



shows the general principle on which it is constructed. The shade in front is hinged and the light may be reflected down on to the table and away from the eyes, if such is desired. This hinged reflector serves to protect the glass from breakage when the lamp is packed for

traveling. By a simple device the wick attachment may be easily removed and a candle substituted. The price of this lamp is \$1.

"AT HOME" PORTRAITS.

BY MRS. S. FRANCIS CLARKE.

OF all the varied fields offered by photography to its votaries, that of home portraiture seems most fitted to fall within the scope of women workers, for in this particular class of work they are saved the fatigue of carrying the photographic kit over longer or shorter distances, as most of the work must necessarily be done at or near home. I do not propose to touch at all the commer-

cial aspect of women as photographers; that subject I must leave to those having professional experience. These notes are but an amateur's advice to amateurs.

In home portraiture there is not any necessity to possess either a glass studio, a conservatory, or even a room that can be used for photographic purposes other than a darkroom. I do not, and probably never shall, care to possess one. For myself, I work entirely in the open air in a small backyard, surrounded on three sides by high, ivy-clad walls, offering for photographic purposes a workable area of something under 15 feet square.

In such a limited space, there is not much room for accessories. The fewer the better, I think, in portrait work. The necessary accessories consist chiefly of a couple of plain backgrounds, one gray, one dark brown, and a pair or two of curtains, with any chair or other piece of furniture the picture may suggest and the house provide. To control the top light, it is advantageous to stretch some muslin curtains upon cord overhead; they are easily drawn into place when required, and will be found to assist greatly in modifying the lighting, especially in large heads. A special background may occasionally—but only occasionally—be required. Then it must be either bought, borrowed, or, as I find sometimes necessary to do, painted by oneself for the occasion. Almost any good lens will do. Despite all that has been written to the contrary, I still use chiefly a R. R., and find it satisfy most of my requirements. As to the camera, the make of that is of no special importance, provided it is substantial and fixed upon a rigid stand.

Regarding draperies—and it is here that women workers should score so strongly over their male rivals in home portraiture—only cut lengths of suitable material should be used, tacking them together and draping them upon the sitter as the occasion and the subject of the picture require. On this overruling of the model's own idea of how to dress “to be taken” most of the ultimate success of the picture depends. If portraits are to be made, pictures that shall interest beyond the circle of the sitter's own friends, all the draperies, the accessories and the pose must be shaped to that end. Chance may give an occasional success, but thorough and consistent results can only come from careful study of all the factors that enter into the picture and an unswerving determination not to pass anything which is short of the predetermined standard.

As a practical example, let us consider the taking of an old man's head, in itself a commonplace, every-day subject enough. Yet what do we really require? If a likeness only is our aim, any old man's head will do; if we desire a picture we must find a typical head, that shall declare itself as such without the aid of an elaborate explanatory title—a head that in the resulting photogram shall display a rugged intellectual strength of character, furrowed with the battle of life, bright with the hale heartiness of advancing years, suggestive of a story, and yielding to the beholder an intrinsic pleasure outside of the individuality of the portrait. Such I set as the standard of Home Portraiture.

In conclusion, I would say, before starting a picture, know exactly what you desire the end to be. Having found your model, study it thoroughly; do not start until you have discovered the mood or expression best suited to the desired end. That knowledge gained, the work becomes a short, pleasant and almost easy road towards success. Remember always that any amateur wishing to take up this branch of photographic recreation must insist upon choosing her

own subject for portraiture, with full liberty to robe and drape the figure as best suited to the picture, rejecting all those who would restrict this full liberty of choice, for if success is to be attained, the models must be like clay in the hands of the potter.—*The Photogram*.

SOCIETIES.

TORONTO CAMERA CLUB.—The third annual exhibition will be held during the week commencing Monday, February 19th. Rules and entry forms may be obtained from the BULLETIN. This Club has recently fitted up its rooms in good style, and offers every inducement to photographers.

CAMERA CLUB, LONDON.—The communications to, and discussions at, the Camera Club will henceforth be published and sold. Those desiring same should communicate with the BULLETIN.

NEW ORLEANS CAMERA CLUB.—The third annual print exhibition will take place on May 3d. Five gold medals will be awarded for the best work in the following classes: Class A, portraits and figure studies, and all other studio work; Class B, interior work, in which are included flash-lights of interiors, enlargements, botanical subjects, and all work in the general class; Class C, landscape, with or without figures, cloud effects, architectural views and other outdoor subjects requiring time exposures; Class D, instantaneous views; Class E, transparencies.

PHOTOGRAPHIC SOCIETY OF JAPAN.—Meeting of December 8th. An ingenious arrangement for photographing from a captive balloon was shown by Mr. K. Ogawa, of the Photographic Laboratory of the General Army and Navy Staff. The camera is suspended on gimbals on a frame so arranged that the ground glass will remain either in a vertical or a horizontal plane or in a plane at any intermediate angle as desired. The exposure can be made by an ingenious electrical arrangement.

CRANFORD CAMERA CLUB.—A note from the President announces that this organization has disbanded. No reason is given.

BOSTON CAMERA CLUB.—The annual meeting was held on January 1st. Officials for 1894: President, E. R. Andrews; Vice-Presidents, G. M. Morgan, W. S. Briggs, J. P. Loud; Secretary, W. C. Brown, 50 Bromfield street; Treasurer, O. A. Eames; Librarian, C. Sprague.

HARTFORD CAMERA CLUB.—The annual exhibition will be opened on Thursday, February 22d, at 2 P. M., at which time Mr. H. L. Bundy will give a talk on "Posing and Lighting," using a model. Pictures must be in not later than the 15th.

SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.—The fourth annual auction sale of Photographic Apparatus will take place on Thursday evening, February 15th, at eight o'clock, at the Society rooms. All apparatus must be in, on or before February 5th. A commission of 10 per cent. will be deducted to defray expenses.

CENTRAL CAMERA SECTION, BROOKLYN Y. M. C. A.—The annual meeting was held on Thursday, January 11th. After the meeting the Section adjourned to one of Brooklyn's best hotels to partake of an excellent menu prepared for them.

Anthony's * Photographic * Bulletin.

EDITED BY

Prof. CHAS. F. CHANDLER, Ph.D., LL.D.,
Prof. ARTHUR H. ELLIOTT, Ph.D., F.C.S.,
FREDERICK J. HARRISON.

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Readable Articles on Topical Subjects.

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E. & H. T. ANTHONY & CO., 591 Broadway, New York.

QUERY COLUMN.

N. B.—We cannot undertake to answer questions of a technical character except through the columns of the BULLETIN. Correspondents will please remember this. No attention will be paid to anonymous communications.

D. L. P.—Your favor received. Thanks. The Strauss Marl recently put on the market by our publishers will serve admirably for the production of snow effects, and, indeed, for any additions of this nature. The "Aristo" mezzo plates also will prove useful. Reference has been made to both of these in the BULLETIN of last year.

A. H.—Your communication received. Opinions have differed somewhat, and, indeed, the whole matter is in doubt. Will you try cutting a plate in half and exposing one-half while the dynamo is at work and the other while it is not, and let us hear of your results?

J. B. B.—Many thanks for the color prints. We hope to make further allusion to them in the next BULLETIN.

H. E. S.—You are evidently an enthusiastic chemical student. Possibly sulphuric acid is present. The more rapid the crystallization, the finer the crystals. Evaporate until the bulk is considerably diminished, and then cool rapidly.

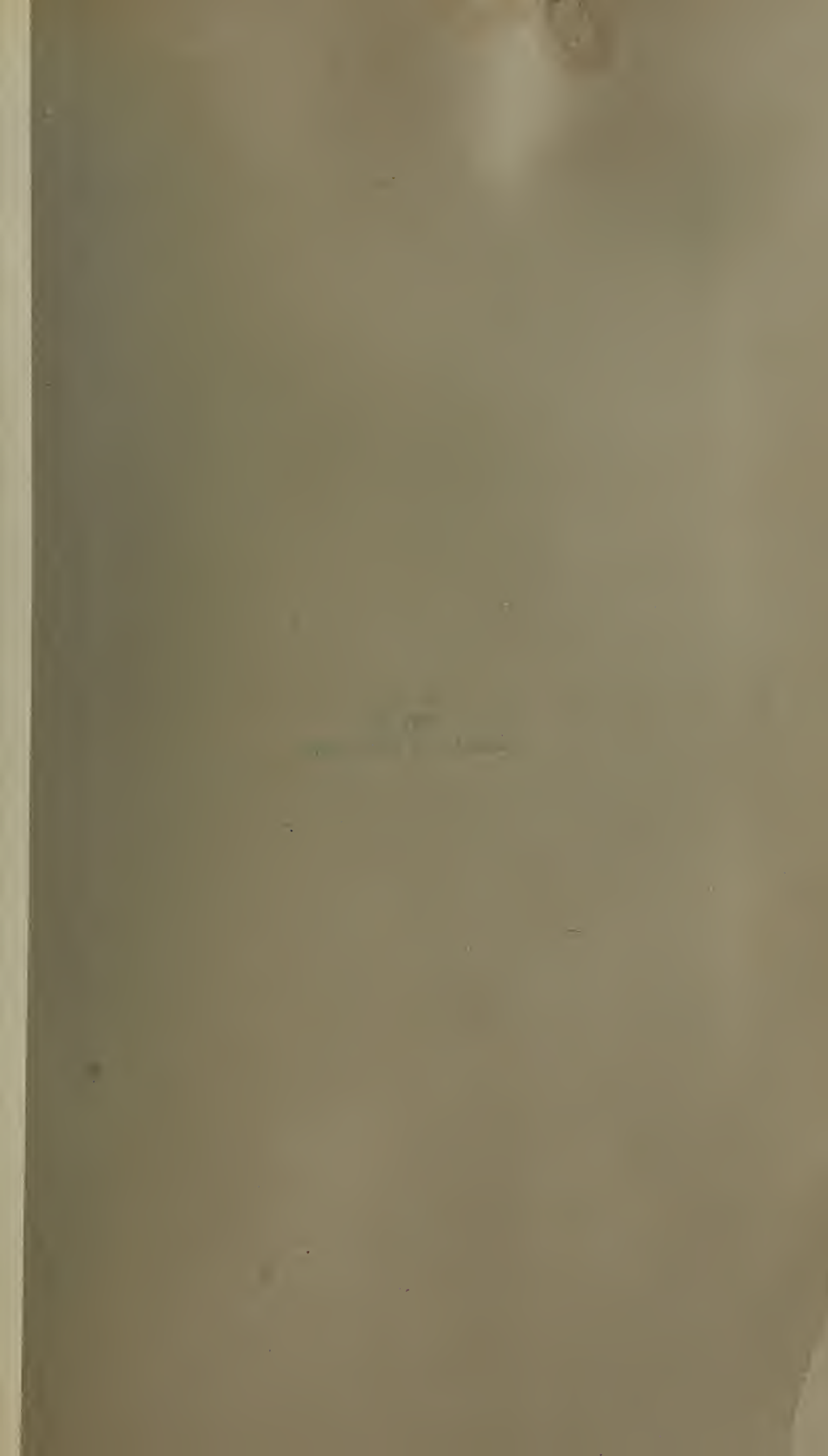
BOOKS RECEIVED.

We have to acknowledge, with thanks, the receipt of bound volumes of the following photographic journals: *The St. Louis and Canadian Photographer*, *The Photographic Times*, *Wilson's Photographic Magazine*, *The Practical Photographer*, Eng., and *The British Journal Almanac*.

"Aristotypes and How to Make Them," by Walter E. Woodbury, is an excellent work of great value to both amateur and professional. The book is divided into two parts, one dealing with the gelatine and the other with the collodion process. The subject is exhaustively treated in a masterly manner. The illustrations will serve to show the relative permanency of gelatine and collodion papers.

TABLE OF CONTENTS.

	PAGE		PAGE
"AT HOME" PORTRAITS, <i>by Mrs. S. Francis Clarke</i>	69	OUR ILLUSTRATION.....	68
BOOKS RECEIVED.....	72	PHOTOGRAPHY IN COLORS, THE METHOD AS PRACTICED BY R. D. GRAY.....	40
BRUSH DEVELOPMENT OF BROMIDE PRINTS, <i>by F. Heldmann</i>	52	PHOTOGRAPHY IN COLORS, <i>by Romyne Hitchcock</i>	50
CLOUDS, <i>by Francis P. Smith</i>	55	PHOTOGRAPHY IN NATURAL COLORS, <i>by E. Valenta</i>	63
ECONOMICAL DEVELOPMENT WITH PYRO ENCOURAGEMENT.....	67	PHOTOGRAPHING ANIMALS, <i>by H. Fourtier</i>	65
FLASH-LIGHT PHOTOGRAPHY.....	37	QUERY COLUMN.....	72
GAS CYLINDERS FOR LANTERN WORK. IMPROVEMENTS IN APPARATUS.....	69	SOCIETIES.....	71
ITEMS OF INTEREST.....	43	SUNDAY PHOTOGRAPHY.....	40
JOTTINGS FROM GERMANY.....	58	THE WASHING OF PRINTS, <i>by R. Ed. Liesegang</i>	65
LANTERN SLIDES BY CONTACT METHOD. LANTERN WORK.....	61	TRIMMING AND MOUNTING, <i>by Edward B. Miller</i>	53
MOUNTS AND FRAMES, <i>by Rev. F. C. Lambert, M. A</i>	47		





NEGATIVE AND PRINT
BY SARONY

PRINTED ON
AMERICAN "ARISTO" PAPER

STUDIO WORK.

ANTHONY'S Photographic Bulletin.

EDITORS :

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

FREDERICK J. HARRISON.

VOL. XXV.

MARCH 1, 1894.

No. 3.

COMBINED TONING AND FIXING BATHS.

THAT there still exists a strong prejudice in many minds against the use of a combined bath for the toning and fixing of emulsion printing-out papers is conceded. But it would seem that the prejudice is really founded on faulty manipulation, not upon actual crucial test. Over-toning, forcing with much-used solutions, too much or too little washing—all are factors in the production of prints of but little stability. With proper treatment prints may be toned and fixed in one operation, and permanent results obtained. We have in our possession hundreds of such prints which have stood every possible test, including that of time. They are to-day the equal of any prints, the toning and fixing of which have been done separately. With the combined bath there is one great advantage apart from the saving of time and labor. The desired tone once obtained, it remains, if washing immediately follows. With the separate fixing bath a change of tone always occurs, and considerable judgment is necessary to determine the moment when the toning should be stopped.

To the amateur the combined bath appeals especially strongly because of its simplicity. The solution is always handy, and one or two prints may be toned and fixed without any waste of material. Where large batches of uniformly toned prints are required, as with the professional, the separate baths may be preferable, though with a slow-working combined bath and previous partial fixation no real objection can be found. For the amateur, the combined bath is and will remain the favorite.

It has been stated in some quarters, where gelatine and other papers were vainly endeavoring to secure a footing, that collodio-chloride emulsion papers were not well adapted for use with combined baths. It becomes more apparent daily that professional photographers cannot with satisfaction to themselves use gelatino-chloride papers, and, as is but natural, amateurs are realizing that collodion is far preferable to the impressionable gelatine. A few remarks on the method to be employed may be found useful.

To those who desire to make absolutely certain that the prints are thoroughly fixed, we would advise the adoption of Dr. Mitchell's plan of immersing each print in a solution of hypo of about 1 to 20 for three or four minutes, before placing in the combined bath. This is not absolutely necessary when a properly made-up bath is used, but we recommend it as removing one of the factors of instability. For the combined bath the following solution may be made up:

Hypo.....	3 ounces.
Nitrate of lead.....	60 grains.
Chloride of gold.....	6 "
Water.....	24 ounces.

Dissolve the hypo, then add nitrate of lead dissolved in a little warm water ; to this add the gold. Shake well and filter.

If 8 ounces of alcohol be added to this bath, no previous manipulation is required ; if the alcohol is not used, only the flattening process is necessary, without the additional first washings.

This will keep well and may be used until about one-third has been removed through absorption by the paper. Do not attempt to patch up an old bath. Any precipitated matter should be removed by decantation or by filtration.

The prints are placed in this bath one at a time, one hand being kept dry, the other pressing the print under the solution. Lay the print first face downwards, and then turn it over. Care is necessary that none of the solution touches the print until the moment of immersion, or yellow patches will inevitably result. The prints are turned over occasionally, the bottom one each time being brought to the surface. It will be found best to remove the print just before the desired tone is reached, for a very slight change takes place in the washing water, due to the action of the toning solution retained in the paper. Tie a piece of muslin over the faucet, to catch any solid matter detached from the pipes. Do not omit this, or black specks may appear, which greatly mar the print. Do not tone to a slaty blue color ; do not use an exhausted bath ; do not wash for twelve hours or more ; do not underprint ; have clean hands, free from perspiration ; use mounts made by a reputable firm, and do not stack the prints one on top of the other to dry. The appearance of white specks after drying may be traced to the very slow drying of the mounted print, due to lack of a good current of air. If a large number of prints are to be dried, they should be spread out on cheese-cloth stretchers. Allow the prints to thoroughly dry before burnishing.

BACKGROUNDS.

THE background of to-day is a much more delicate article than that of wet-plate days. The progressive photographer has quite a variety, and, indeed, the backgrounds of a gallery represent a considerable amount of money invested. To keep these grounds in first-class condition, while subjecting them to constant handling, is not an easy thing. Careless treatment results in creasing or cracking, this simply ruining the effect. It is not to be supposed that the operator is willfully careless. The fault too often lies in the background carrier employed. In the case of rigid carriers, where the roller is fixed some 8 or 10 feet from the floor, proper handling is impossible. In order to manipulate a series of

backgrounds with least detriment to them, it is necessary that means be provided for the lowering and elevating of the rollers. Two movements are necessary, one by which the background is wound around its roller, and the other by which this roller may be raised and lowered. The background as received from the maker is rolled painted side inward. Being adjusted to the roller while the top of the carrier has been lowered to a position within easy reach of the operator, it is wound off with the painted side out.

To extend the ground for use, the roller is raised and the background pulled out to its length and allowed to fall into position. By varying the height of the roller varying effects may be obtained with one background; that is, one may be made to serve the purpose of several.

To roll up, lower the roller until it is within easy reach, and then wind up slowly. The bulk of the background being on the floor, there is little weight on the roller, and any creasing that may occur is not a permanent injury; and the whole thing being within easy reach, it is a simple matter to adjust. By the use of such a carrier a background will last for an indefinite period.

REWARDS FOR MERITORIOUS DISCOVERIES AND INVENTIONS.

THE attention of ingenious men and women is directed to the fact that the Franklin Institute of the State of Pennsylvania for the Promotion of the Mechanic Arts may grant, or recommend the grant of, certain medals for meritorious discoveries and inventions which contribute to the promotion of the arts and manufactures.

The character and conditions of these awards are briefly stated in the following :

The Elliott Cresson Medal, founded in 1848 by the gift of the late Elliott Cresson. This medal is of gold, and by the terms of the deed of trust may be granted for some discovery in the arts and sciences, or for the invention or improvement of some useful machine, or for some new process, or combination or materials in manufactures, or for ingenuity, skill or perfection in workmanship.

The John Scott Legacy Premium and Medal (\$20 and a medal of bronze), awarded by the City of Philadelphia. This medal was founded in 1816 by John Scott, a merchant of Edinburgh, Scotland, who bequeathed to the City of Philadelphia a considerable sum of money, the interest of which should be devoted to rewarding ingenious men and women who make useful inventions. The premium is not to exceed \$20, and the medal is to be of copper and inscribed, "To the Most Deserving."

The control of the Scott Legacy Premium and Medal (by Act of the Ordinance of Councils in 1869) passed to the Board of Directors of City Trusts, and has been referred by the Board to its Committee of Minor Trusts, and that Committee has resolved that it will receive favorably the name of any person whom the Franklin Institute may from time to time report to the Committee on Minor Trusts as worthy to receive the Scott Legacy Premium and Medal.

The Edward Longstreth Medal of Merit, founded in 1889 by Edward Longstreth, machinist, and late member of the Baldwin Locomotive Works. This medal is of silver, and may be awarded for useful invention, important discovery and meritorious work in, or contributions to, science or the industrial arts.

Full directions as to the manner and form in which applications for the investigation of inventions and discoveries should properly be made will be sent to interested parties on application to the Secretary of the Institute.

BROMIDE ENLARGEMENTS.

PAUL BALTIM, of Potsdam, writing on this subject, lays the cause of the many failures, not to the paper itself, but to the treatment of it. He prefers the iron developer, and recommends the formula given below :

Potassium oxalate (saturated solution).....	120 parts.
Sulphate of iron (saturated solution)	20 "
Potassium bromide (1 to 10)	5 to 6 drops.
Water	60 parts.

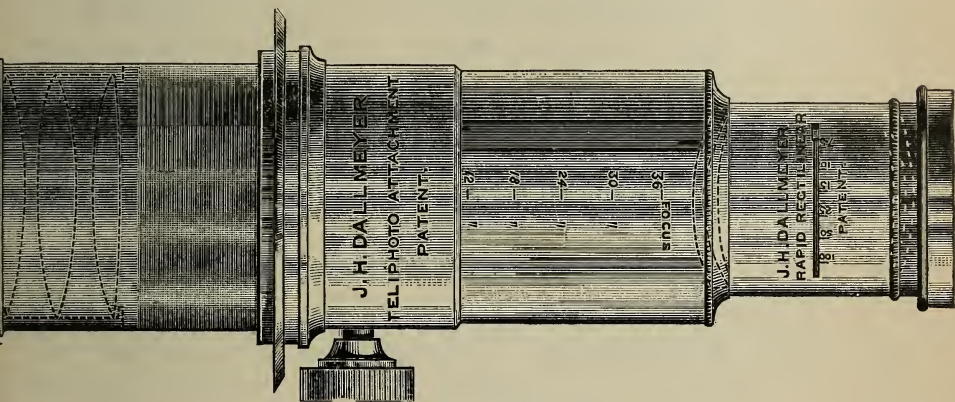
The solution should always be used fresh, as then its developing capacity may be accurately judged and the whites kept unimpaired. After exposure, the paper is soaked in water for one minute, and then the developer poured over it. Under normal conditions of temperature the picture should appear in about thirty seconds. If it comes up sooner, the exposure was too long, and the print will probably be a failure. It may be restrained by potassium bromide, but the disagreeable greenish tone cannot be removed. Under-exposure may to a certain extent be remedied by the addition of a small quantity of the iron solution. A little hypo also will do no harm. After development, the print is placed in the clearing bath. To obtain pure whites, it is absolutely necessary that the picture be thoroughly washed after clearing before placing in the fixing bath.

TELE-PHOTOGRAPHIC LENSES.

CONSIDERABLE has been written regarding the tele-photo lens, but it has been presented in so scientific a manner, replete with many confusing propositions, algebraic and otherwise, that the real meaning seems to be hidden from the the common every-day photographer who has never devoted time to the study of optics. To the chemist the symbols N_2O_5 or SO_2 are as plain as A B C to the ordinary student, and the tendency of many of our writers seems to be to make use of as many scientific terms as possible, with the idea that the higher sounding an article is, the more remunerative should be the recompense. Should the writers of recipe books work from the same standpoint, we fear that Mlle. O'Brienne (Bridget O'Brien) would favor us with some rare messes, such as Soyer himself never dreamed of and would not recognize.

The tele-photo lens is really an "achromatized telescope," and by its use, instead of the ordinary result as obtained with the ordinary lenses, *i.e.*, lenses of ordinary angle as used by the professional and amateur, we have, in *theory*, a lens of three or four times the length of focus, but *actually* one giving the effect of such, though being only about one-half the length of focus. The test made was by using a Dallmeyer $6\frac{1}{2} \times 8\frac{1}{2}$ rapid rectilinear lens and making an exposure; then, without changing the focus of the camera, *i.e.*, leaving the ground-glass in same position as regards the front as it occupied in making the negative, the "moderate-power negative element" was added, focused sharply with the rack and pinion movement attached to same, and a plate exposed. The result was, that, although the circle of light on the plate was only 4 inches in diam-

eter, a sign that showed $\frac{3}{8}$ of an inch in length in the first negative was 1 inch long in the second one, every line showing up sharp and clear. The annexed cut shows the arrangement of the Dallmeyer rapid rectilinear lens with the moderate-power negative element attached; the dotted lines represent the position of the lenses, and the table shows the increase in apparent focus. For instance, taking a 4 x 5 rapid rectilinear, which has an equivalent focus of 6 inches, and adding a negative element of 3 inches, with the ground-glass at 3 inches from the back lens, we can produce a distant object of the same size as would have been the case if a lens of 12 inches equivalent focus was used. Placing the ground-glass 12 inches distant from the back lens, the result is same as if a lens of 30 inches equivalent focus had been used. The great advantage of these lenses over all other styles is, that we can vary the size of the object on the plate to suit ourselves, while with the ordinary type of lenses we require quite a number to perform nearly the same thing, and then we could only do it by having a camera longer than any ordinarily made.



MODERATE-POWER TELE-PHOTO.

Moderate-power tele-photo lenses are a combination of Dallmeyer's rapid rectilinear lenses with a new model of the patent negative attachment. It is strongly recommended that the focus of the negative should be one-half, or a little longer than one-half, of the positive. In the cut a 6-inch rapid rectilinear lens is combined with a 3-inch negative attachment.

NOTE.—Equivalent focus for different extensions of camera is equal to twice the camera extension, or back focus, plus the focus of the rapid rectilinear. For a 6-inch lens, combined with a 3-inch negative, a back focus of 3 inches corresponds to 12 inches equivalent focus; 6 inches corresponds to 18 inches equivalent focus; 9 inches corresponds to 25 inches equivalent focus; 12 inches corresponds to 30 inches equivalent focus; and so on.

Focus, 3, 4, 5, 6 and 7 inches. Diameter of negative, $1\frac{1}{4}$, $1\frac{1}{2}$, $1\frac{3}{4}$, 2 and $2\frac{1}{4}$ inches. To be used with rapid rectilinear lens, 5 x 4, 6 x 5, 8 x 5, $8\frac{1}{2}$ x 6 $\frac{1}{2}$, 10 x 8 inches. Price (with rack and pinion movement in brass), \$31, \$37, \$43, \$49.50, \$57.50.

The table on page 78 shows the extensions of camera, measured from the focusing screen, necessary to cover the various sizes of plates in current use. The positive lens is in each case taken as a lens working at $f/8$, and the intensities are given for this lens working at full aperture.

The use of the Dallmeyer rapid rectilinear lenses by both professional and

amateur has become so universal that there are few without such of one size or another, and the negative element can be procured that is adapted to any such,

Back focus.	Plate covered.	6-inch positive and 3-inch negative.		8-inch positive and 4-inch negative.		10-inch positive and 5-inch negative.		12-inch positive and 6-inch negative.	
		Equivalent focus.	Intensity at full aperture.	Equivalent focus.	Intensity at full aperture.	Equivalent focus.	Intensity at full aperture.	Equivalent focus.	Intensity at full aperture.
4 $\frac{3}{4}$ inches	3 $\frac{1}{4}$ by 3 $\frac{1}{4}$	15 $\frac{1}{2}$	$\frac{I}{20\frac{2}{3}}$	17 $\frac{1}{2}$	$\frac{I}{17\frac{1}{2}}$	19 $\frac{1}{2}$	$\frac{I}{15.6}$	21 $\frac{1}{2}$	$\frac{I}{14\frac{1}{4}}$
5 $\frac{1}{2}$ "	4 $\frac{1}{4}$ by 3 $\frac{1}{4}$	17	$\frac{I}{22\frac{2}{3}}$	19	$\frac{I}{19}$	21	$\frac{I}{16.8}$	23	$\frac{I}{15\frac{3}{8}}$
6 $\frac{1}{2}$ "	5 by 4	19	$\frac{I}{25\frac{1}{3}}$	21	$\frac{I}{21}$	23	$\frac{I}{18.4}$	25	$\frac{I}{16\frac{2}{3}}$
8 "	6 $\frac{1}{2}$ by 4 $\frac{3}{4}$	22	$\frac{I}{29\frac{1}{3}}$	24	$\frac{I}{24}$	26	$\frac{I}{20.8}$	28	$\frac{I}{18\frac{2}{3}}$
10 $\frac{3}{4}$ "	8 $\frac{1}{2}$ by 6 $\frac{1}{2}$	27 $\frac{1}{2}$	$\frac{I}{36\frac{2}{3}}$	29 $\frac{1}{2}$	$\frac{I}{29\frac{1}{2}}$	31 $\frac{1}{2}$	$\frac{I}{25.2}$	33 $\frac{1}{2}$	$\frac{I}{22\frac{3}{8}}$
13 "	10 by 8	32	$\frac{I}{42\frac{2}{3}}$	34	$\frac{I}{34}$	36	$\frac{I}{28.8}$	38	$\frac{I}{25\frac{1}{2}}$
15 $\frac{3}{4}$ "	12 by 7	37 $\frac{1}{2}$	$\frac{I}{50}$	39 $\frac{1}{2}$	$\frac{I}{39\frac{1}{2}}$	41 $\frac{1}{2}$	$\frac{I}{33.2}$	43 $\frac{1}{2}$	$\frac{I}{29}$
19 $\frac{1}{4}$ "	15 by 12	44 $\frac{1}{2}$	$\frac{I}{59\frac{1}{3}}$	46 $\frac{1}{2}$	$\frac{I}{46\frac{1}{2}}$	48 $\frac{1}{2}$	$\frac{I}{38.8}$	50 $\frac{1}{2}$	$\frac{I}{33\frac{3}{8}}$
24 $\frac{1}{4}$ "	18 by 16	54 $\frac{1}{2}$	$\frac{I}{72\frac{2}{3}}$	56 $\frac{1}{2}$	$\frac{I}{56\frac{1}{2}}$	58 $\frac{1}{2}$	$\frac{I}{46.8}$	60 $\frac{1}{2}$	$\frac{I}{40\frac{1}{2}}$
29 $\frac{1}{4}$ "	22 by 20	64 $\frac{1}{2}$	$\frac{I}{86}$	66 $\frac{1}{2}$	$\frac{I}{66\frac{1}{2}}$	68 $\frac{1}{2}$	$\frac{I}{54.8}$	70 $\frac{1}{2}$	$\frac{I}{47}$
32 $\frac{3}{4}$ "	25 by 21	71 $\frac{1}{2}$	$\frac{I}{95\frac{1}{3}}$	73 $\frac{1}{2}$	$\frac{I}{73\frac{1}{2}}$	75 $\frac{1}{2}$	$\frac{I}{60.4}$	77 $\frac{1}{2}$	$\frac{I}{51\frac{3}{8}}$
38 $\frac{1}{2}$ "	30 by 24	83	$\frac{I}{110\frac{2}{3}}$	85	$\frac{I}{85}$	87	$\frac{I}{69.6}$	89	$\frac{I}{59\frac{3}{8}}$
48 $\frac{1}{4}$ "	34 by 34	102 $\frac{1}{2}$	$\frac{I}{136\frac{2}{3}}$	104 $\frac{1}{2}$	$\frac{I}{104\frac{1}{2}}$	106 $\frac{1}{2}$	$\frac{I}{85.2}$	108 $\frac{1}{2}$	$\frac{I}{72\frac{1}{2}}$

but it is unnecessary to get them larger than for 8 x 10, as the results obtainable from this or the smaller sizes are all one could wish.

(To be continued.)

COLOR PHOTOGRAPHY.

At a recent meeting of the French Physical Society in Paris, Professor G. Lippmann exhibited several very interesting specimens, the result of his researches into the problem of photography in colors. Some very marvelous landscapes were shown, but the greatest interest was excited by some portraits made direct from Nature. These are the first taken direct by Lippmann's method. The flesh tints, we are told, were reproduced in a wonderfully perfect manner, and all the colors showed a high degree of richness and purity.

These results are extremely interesting and remarkable, though they cannot, of course, yet be looked upon as anything more than laboratory experiments. The practical application may come when means are devised for obtaining the same results more rapidly, and when less trouble and expense are necessary for the proper carrying out of the work. The colors, too, being visible only when the plates are held in certain positions, it is hardly likely that this method will ever find application outside of the laboratory and the lecture-room. It is somewhat interesting to note that the earliest photographs, the daguerreotypes, were open to the same objections exactly as these color plates. The exposure was very prolonged, the image only visible in certain positions, and duplication possible only by the aid of the camera. It is to be hoped that our successors, fifty years hence, will have as good a record for the first half of the twentieth century as that made by the workers in photography during the latter half of the nineteenth.

ITEMS OF INTEREST.

DON'T MISS THE ST. LOUIS CONVENTION.—This should be the motto of all photographers for the next five months. The report of the meeting of the Executive Committee, published in this issue of the *BULLETIN*, shows clearly that this will be the convention of conventions. St. Louis is famous for its hospitality, the members of the Committee are known to be men of geniality and good business ability, the prizes awarded are many, the whole range of photography is covered by the various classes, and the collection will surpass anything yet exhibited in this or any other country. Our foreign friends will be attracted here, and American photographers will have an opportunity of seeing a collection of photographs truly representative of the condition of the art. It is well to make arrangements at once, and to see to it that St. Louis is inundated with photographers next July. Secretary Rösch is the most courteous and capable of secretaries. He has a typewriter, and will doubtless furnish any information not contained in our report.

THE Autotype Company of London employs over one hundred persons, and their works cover $1\frac{1}{2}$ acres of ground. The work done embraces seven departments: 1st. The manufacture of pigmented tissues in various monochrome colors, selected for their stability under the action of light and suitability to photographic expression. These pigments are ground in a suitable medium and special mills to the utmost tenuity, worked into an intimate mixture with gelatine, and suitable paper in continuous length is uniformly coated with the mixture by special machinery and steam-power. 2d. The solar department, in which is carried on the production of negatives, transparencies, enlargements

and the like. 3d. The manufacture of dry plates. 4th. Collotype printing. 5th. Autogravure—the method of producing by means of a transparency from the original negative a photographic image in relief on a copper plate, which the etching converts into intaglio. The plate can be steel-faced, and printed from in the ordinary way in a copper-plate printing press. 6th. Chemical department; and 7th, the Autotype fine art gallery.

IN the programme of study that has been arranged for the soldiers at Willett's Point we note that photography takes an important place. The course prescribed is as follows: "*Military photography*.—Negatives by the dry-plate process, developers and intensifiers, silver printing and the finishing and mounting of prints, map printing by the blue process and on bromide paper. Each officer to submit for examination two landscapes, negatives, silver and blue prints, two photographic copies, negatives, silver and blue prints; negative of map with three blue and three bromide prints. Two non-commissioned officers will be detailed each week for instruction in photography."

AT a recent meeting of the London Camera Club an interesting paper was read by Arthur Burchett on "Photography by Means of Colored Glasses in Combination with the Lens." Trying a combination of yellow and green screens, he obtained a satisfactory sky above the landscape. The method he finally adopted was to place the two glass screens between the combinations of a Dallmeyer rapid rectilinear lens, the green screen behind the front lens, and the yellow in front of the back lens. If a small stop is used, a second stop must be placed at the back of the yellow glass. Mr. Ives thought that the yellow and green screens worked better than the green alone, because the yellow used was faulty.

Mr. Dallmeyer spoke very highly of Mr. Burchett's results.

AT a recent meeting of the Society of Amateur Photographers of New York Mr. Wuestner stated that bathing an ordinary plate for two minutes in a bath of water 9 parts and ammonia 1 part will double the sensitiveness of the plate. Plates thus treated will keep for a short time only. Plates of medium rapidity, he said, will keep for five or six years, while fast plates will retain their properties some three or four months only. There is no difference in the keeping qualities of the ordinary plates and the orthochromatic plates made in this country.

THE two pictures alluded to in Mr. Fryer's letter will be mailed for examination to any of our readers. They are extremely interesting as giving an idea of squatter life among the Chinese. We cannot agree with our correspondent on the desirability of obtaining prints toned in two colors, slate-blue and brown. One of the prints has turned slightly yellow all over, indicating that permanency is not one of its characteristics. The rich brown alluded to is very fine, but the slaty blue, while giving a slight atmospheric effect, rather mars than improves the print.

ON Tuesday, February 13th, Mr. T. H. Blair, of the Blair Camera Company, sailed for England, taking over a complete set of machinery for the coating of sensitive, rollable films. The European branch of this company was

started about a year ago and has been a gratifying success. Their cameras, manufactured here, have caught on in the old country. Several new designs of wonderful ingenuity may be on the market before very long.

WE reproduce here in half-tone one of the lantern slides shown by Otis A. Poole at the Society of Amateur Photographers of New York. Mr. Poole



SEICHAN (PURITY).

has an interesting country to work in, and it can be truly said that he has made a wonderful series of negatives. His lecture, "One Day in Yokohama," should be heard in every city in the United States. It gives an insight into things Japanese only inferior to an actual visit to that country.

THE *Photogram* is a bright, extremely interesting magazine, calculated to prove a formidable rival to its contemporaries. In general style it is modeled somewhat after the American journals, being printed on good paper and well illustrated. The subscription price per year is \$1.00, not 96 cents, as stated in our February issue.

THE famous Harvard dry plate has been re-issued under the name of the Record dry plate. The brand No. 3 is equal to the most rapid plate on the market. The Watkins' exposure meter plate number is 120. The many good qualities of the Harvard plate will be remembered, and the Record will doubtless find many friends.

Rockwood's famous Union Square gallery is for sale. Mr. Rockwood finds that it is too much of a strain to attend to two large establishments, and retains

his uptown gallery. The Union Square position is one of the best in the city, and this is a good opportunity for an enterprising, business-like photographer.

INFORMATION of the whereabouts of William F. Staples, recently of 75 Chipewa street, Buffalo, will be gratefully received by his wife. He left home on the morning of September 30th, drew his money from the Ideal Crayon Company's office, and said he was going to Chicago. Business troubles had worried him considerably. The missing man is of medium height, has dark-brown hair and mustache, and is forty-five years old.

WE are in receipt of a batch of entry forms for the Photographers' Association of America competition next July, and will send same to any applicant. The Executive Committee contemplate issuing an elegant souvenir programme some time before the date of the convention.

THE air brush is of great use in negative retouching. A half-tone in the January number of the *Progressive Art Journal* gives an excellent marine view, the clouds and sky effect being put in upon the original negative with the air brush by H. Parker Rolfe, of Philadelphia.

THE Crescent platinite paper is an excellent printing medium, being a platinum paper on which every gradation may be obtained. It is printed until the image is fairly well defined, with detail visible in the high lights, and is developed in a cold bath of oxalate of potash and bichromate of potash, being finished in a bath of dilute muriatic acid.

THE following formula for writing on glass is given by the *Druggists' Circular* :

Bleached shellac	2 parts.
Venice turpentine.....	1 part.
Oil of turpentine.....	3 parts.
Lampblack	1 part.

Warm the first three ingredients together over a water bath, and then stir in the lampblack, incorporating thoroughly.

THE latest thing in "photo swindles" is reported from St. Louis. Printed contracts, offering cabinets at \$3.50 per dozen, are cut in half, the upper part being sold for 50 cents. The genuine contracts read that, upon the payment of 50 cents on account, the dozen cabinets will be delivered for an additional payment of \$3.

SNOWDEN WARD is getting lots of advertising out of the discussion on the word photogram.

THE *Pacific Coast Photographer* has changed ownership, Morgan Backus retiring and the management being assumed by Geo. W. Reed.

ALL communications for the April issue, all new advertisements and matter connected therewith, should reach us not later than March 24th.

CLOUDS.

BY FRANCIS P. SMITH.

(Continued from page 57.)

LET us now turn to the consideration of a landscape pure and simple, under the same conditions of lighting as advocated for a marine view. The problem here is somewhat more difficult than in the previous instance, as we lose the benefit of the large quantity of light reflected from the surface of the water. In the country, where the prevailing tint of the fields is green, we will feel this loss more than in the city, where the reflected glare from the pavements is in many cases considerable.

It is obvious in this case that a longer exposure will be necessary in order to get detail in the foreground. This means that the sky, with practically the same intensity of illumination as in the case of the marine view, will receive at least double the exposure, and a loss of the cloud forms will be the result.

Here, then, is a case when the screen and isochromatic plate may be used to the best advantage. It must be borne in mind, however, that the function of the screen is by no means a mechanical one. While it certainly reduces the effective illumination of the sky, with a consequent prolongation of the exposure, it also affects the other parts of the picture in a precisely similar manner. Its true function is to render a correct representation of the contrasting colors of the subject possible to a large degree. Under ordinary conditions, the high light of the sky, being blue, would be rendered with much greater vigor than a high light of yellow with exactly the same illumination. In other words, the portion of the negative representing the blue would be much denser than that representing the yellow, and this is one of the results which we are striving to obviate.

It may be urged that on a cloudy day the blue sky is obscured, and that the clouds themselves are different shades of gray only. This is only partly true, however, for it must be remembered that the blue color of the sky is more apparent than real, and is supposed to be an effect produced by distance and certain atmospheric conditions. This, of course, is only a general statement, but it serves to illustrate the point to be emphasized, viz., that the clouds are subject to the same conditions, being separated from us by a greater or less distance, the space being filled with the atmosphere that surrounds the earth. As a result, their color partakes, though in a less degree, of the same blue tint as the sky. This is further borne out by the fact that an orthochromatic plate without a color screen often makes it possible to secure cloud forms that would be impossible without its use.

Having passed this point, it becomes necessary to reduce the exposure of the sky to the smallest amount possible, and yet retain sufficient detail in the foreground. A sky or cloud shutter is often a valuable adjunct just here, and its use was mentioned in the preceding pages of this article. Even with all these precautions, it will sometimes be necessary to resort to double printing. If possible, it is always advisable to secure a cloud negative by a second exposure on the same subject, timed for the clouds alone. This should be done on an orthochromatic plate, preferably with a screen, and will avoid the double masking usually necessary in printing. This masking is frequently done by means of pieces of paper cut to the proper shape. This is a somewhat clumsy and difficult procedure, however, and the writer would recommend the use of some

opaque backing to the glass side of the plate, similar to Strauss marl, which backing can easily be made to conform to the sky line with sufficient accuracy.

If desired, this may be put on the back of a second sheet of glass placed on the top of the printing frame, to secure a more diffused effect.

TRIMMING AND MOUNTING.

BY EDWARD B. MILLER.

(Continued from page 55.)

A NOVEL and pleasing "wrinkle," especially for certain portraits or group subjects, is the ragged edge. The print is roughly torn to the desired shape and so mounted. "My Nephew" is treated in this way. The picture was taken in a hurry, out in the backyard. The portrait of the little fellow came out very good, but its peculiar position upon the negative, the want of arrangement of the "accessories," pillows and baby paraphernalia, and the fact that my nephew has a large relationship which wants pictures, made it necessary to do something unusual. The ragged edge just filled the bill. Another happy application of this "wrinkle" is shown in "Roughing It." Two groups, posed in adjacent windows, were taken on the same negative. Trimmed and mounted in the usual way, the windows would have been widely separated by a plain, uninteresting clapboarded wall, but, by tearing out each irregularly and mounting neatly on one card, the result is surprisingly satisfactory.

My method of conducting the mechanical operations of trimming and mounting is as follows: A print is taken from the water and laid lightly between blotters, so that only the excess water is absorbed. It is then laid, face up, upon a plate glass and trimmed, using a hard-rubber square as guide, and a rotary trimmer to cut. (Trimmer should always have a good, clean edge.) Next, the print is laid, face down, upon clean paper. The second print is made ready in the same way and laid upon the first, edges overlapping; the third upon the second, and so on, until four, six or eight (according to the kind) are thus piled.

Next comes the pasting. I use flour paste. It costs practically nothing, is easily and quickly made, and is at least as serviceable as any prepared mountant sold. A tablespoonful of flour, 2 or 3 ounces of cold water, stirred until all lumps are broken and the flour and water well mixed, then 3 or 4 ounces of boiling water added, and the mixture stirred over heat until it thickens, makes paste enough for a small gallery.

Apply the paste with a stiff brush evenly and thinly over the back of the top print; be sure the edges and corners are well covered. Take it up carefully and place it lightly in its position upon the mount; gauge with pencil or a stick, to insure correct centering or exact position; overlay with a clean, dry blotter, press down by hand and then roll flat, steadily and firmly, with squeegee or print moulder. Examine the job, see that the print adheres perfectly and that there are no air blisters, lumps or large particles of grit between print and mount; if there are any faults, correct them then and there. Care, cleanliness and freedom from dust are absolute requisites for good results. Gauging is less troublesome and quicker than measuring and marking by pencil; it requires just a little practice to become skilled at it.

Gelatine papers that have not been hardened are difficult to manage in the manner described. They will stick to the square, pasting paper and to each other, and are apt to tear when separated. The best way to do with such soft prints is to trim and mount them "dry." Paste applied to dry prints must be well rubbed and spread, particularly along the edges and at the corners. If the moisture from the paste strikes through, it is advisable to overlay with waxed paper, to press and secure the prints to the mounts instead of blotters.

The mounted prints are stacked upon each other with clean sheets of blotting paper between and kept under light pressure for a short while. Those with sticky surfaces should have waxed papers laid upon them before the blotters are placed. The pressure need not be very heavy, the object being merely to flatten and insure perfect pasting and to partially dry the prints; it should not be prolonged, as the blotters soon become moist. Next restack the mounts loosely, face to face, omitting blotters; place a light flat object, such as a thin book, or even a sheet of heavy pasteboard, upon the pile and allow it to remain undisturbed until dry. Do not weight them down, as it will prevent the air from circulating freely and retard their drying. They will dry out flat.

The selection of mounts is a matter of consequence. Tint and size must be considered. A print from a 5 x 7 negative looks better mounted upon a 10 x 12, than it does upon a 5 x 7 or 6½ x 8½ card. An ample border "sets off" a picture. Unless there is a special reason for it, there should be but one print upon a mount. Collins' mounts may be had in great variety of tints and combinations; for plain cards, the dove, light buff and granite gray are my favorites. I keep a stock of each always on hand, and when mounting am guided in selecting by the nature of the subject and tone of the print.

Burnishing is the final operation in the manipulation of albumen, gelatine and collodion prints. Platinotypes, kallitypes and bromides do not have to suffer the ordeal of the rollers. Albumen prints should be burnished shortly after mounting, before they are dry; but gelatine and collodion prints must be thoroughly dry. The simplest lubricator, and the best for ordinary purposes, is dry castile soap, rubbed off upon a flannel or soft clean cloth, and then well rubbed upon the print. Pass the pictures through the heated burnisher under light pressure at first; then increase the pressure. This method is advised on precautionary grounds. There is less risk of "getting caught," an accident which may have very distressing effect upon intellect and morals. To those who do not possess a burnisher, I would say with emphasis, use American "Aristo," and even for those who are so fortunate, this paper will be found most advantageous. Burnishing, of course, gives an extra finish to this paper, but it goes very well without it, as the film is hard, smooth and brilliant.

Finally, there should be system in preserving a collection of photographs. They may be arranged according to subjects, trips or localities. It is certainly neater, when possible without other sacrifice, to adopt one size of mounts, and keep the pictures classified and preserved in suitable cases, than to use mounts of all sizes and shapes and stack them in a senseless heap. I have adopted 10 x 12 for size of mount, the "B B Letter File" cases (empty) 10 x 12 for preservers, and have classified by localities. If it is worth taking pictures, developing, printing and toning them, surely it is also worth trimming and mounting them neatly, and preserving them in good and presentable order.

STEREOSCOPIC VIEWS AND HOW TO CUT AND MOUNT THEM.

BY JAMES SHEPARD.

WITH reference to my article in the "International Annual," 1894, entitled as above, a correspondent from Braila, Roumania, quotes from page 189 as follows: "Next measure from this object in each negative $1\frac{1}{2}$ inches towards the middle of the plate and then mark the vertical lines at right angles to the horizontal one, as shown in the illustration. This defines the top and one side edge for both prints," and then says, "Ought not the outer edges of the uncut print to be defined rather than the inner edges, as the outer edges of the uncut print would govern the distance between the centers of the pictures when mounted?" He also notes that the illustration "shows a much greater distance between the center line and the outer edges than it does between the center and inner edges, and as it will be the outer edges which are placed together to form the inner edges or center of the mounted prints, * * * the mounted pictures would necessarily be more than 3 inches from center to center.

This evidently applies only to the two first figures in the illustration of "the negative" and "uncut print" and leaves out of consideration the illustration of the cut and mounted print in the third figure, as well as that part of the text which says, page 191, "place a plate-glass pattern $3\frac{1}{2} \times 3$ inches square, with its longest dimension up and down, and with two of its edges coincident with the marked lines. Then cut with a knife in the usual way to the size of the pattern."

Now, if the pattern be twice $1\frac{1}{2}$ inches wide, and, trimming by it, the defined inner edge of the print is cut at just $1\frac{1}{2}$ inches from the central object, that act also defines the outer edge at just $1\frac{1}{2}$ inches from the same object, so that each cut print will be just 3 inches wide and the central objects in the mounted view will be just 3 inches from each other, and this will be the case whether the outer or inner edges of the uncut prints be first defined to gauge from. There is no mistake in the illustration or text as to this point and the mounted prints are not more than 3 inches from center to center. The illustration is to a scale, the distance from the defined inner edges to the vertical broken lines in the two first figures being $1\frac{1}{2}$ inches in the original layout, and all of each print that exceeds $1\frac{1}{2}$ inches at the outer ends will be cut off in trimming to size as shown in the third figure. What variation there may be in either figure is due to the paper stretching in mounting, and in the third figure possibly the glass pattern used may have been slightly over 3 inches in width.

This correspondent also says: "It matters but little where the outer edges of the mounted prints come, so long as the centers are the correct distance apart." Now, after locating the centers by a certain object, if a materially greater width is left on the outer sides of that object in the mounted prints than on the inner sides, then the selected objects cease to be the real centers, the actual centers being in fact formed at unselected portions of the prints. This will invariably impair, to a greater or less extent, the stereoscopic effect, as may be clearly seen upon comparing two views from the same negative when one is cut and mounted

with both edges trimmed alike, and the other with an excess of width outside of the selected centers. It is just as material to have the outer edges trimmed accurately to a given distance from the central object as it is to have the inner edges so trimmed, and the distance from center to center, within certain limits, is wholly immaterial. In fact, when trimmed equally from the central object we can get precisely the same stereoscopic effect in prints only 2 inches wide and 2 inches from center to center, that we can when the centers are 3 inches apart, excepting, of course, the 3-inch prints extend over a greater field.

The method described in my article has three principal objects in view; first, trimming from a central object; second, laying the prints out on the negative, and, third, designating the right and left print by a truncated corner. One reason for defining the inner edges of the uncut print instead of the outer ones, was that the finished print will look better with the outer corners truncated than it would with the inner corners cut off. These objects may be accomplished in somewhat different ways. If one does not wish to mark the negative he can trim from a central object by making a vertical line in the middle of the glass pattern, then after marking or trimming a working line (either at base or top) squarely along the entire length of the uncut prints, place the pattern on one end with its central mark over the selected central object and with one edge on said working line; then cut to size and in like manner trim the other print, and precisely the same result will be had, in so far as trimming from the center is concerned.

*A most excellent article recently published says: "Trim the prints so that on the left of the right-hand picture, and the right side of the left-hand picture, a little more of the subject is seen than on the other sides of the picture. Or, to put it in another way, the sides of the prints which come together in mounting should each show more of the subject than the outside sides. A difference of from $\frac{1}{16}$ to $\frac{1}{8}$ of an inch is usually a sufficient margin."

This is the ordinary way of trimming and the way I practiced until I found out how to get better results. This way gives fairly good results and may sometimes *happen* to be perfect. But it is too indefinite and uncertain. A print trimmed from a central object will always show a difference at the edges as described in the last quotation, but this difference will vary greatly in different views and with different objects in the same view.

It depends largely upon the distance that said objects were from the camera when the view was taken. As a rule the nearer objects show the most difference. I have one view in which one object is just exactly $\frac{1}{16}$ of an inch from the left-hand edge of each print; another object in the two prints varies in distance from the same edge just $\frac{1}{16}$ of an inch; another $\frac{3}{32}$, and still another full $\frac{3}{16}$, while the object from which the print was trimmed is precisely in the vertical middle of each print. Other views thus trimmed show a difference over $\frac{1}{4}$ of an inch. If trimmed from a central object, it is wholly immaterial whether the other objects in the view are a greater or less distance from a given edge. That they vary a little is only an incident to a properly trimmed stereoscopic view, and inasmuch as this variation is greater or less in different views, it follows in theory, as well as in practice, that the best result can be obtained by following a rule for trimming that does not depend upon a variable feature.

PHOTOGRAPHERS' ASSOCIATION OF AMERICA

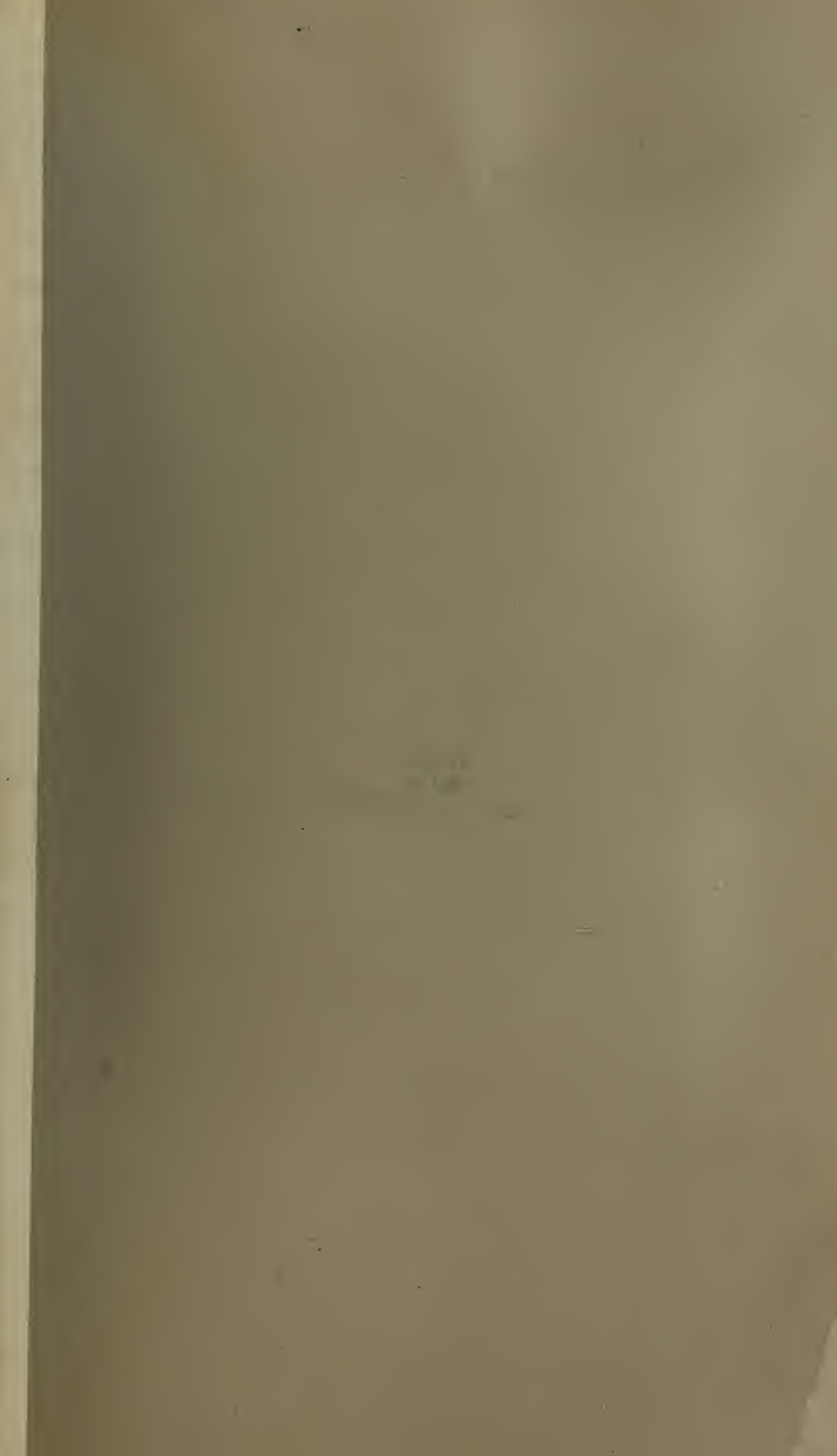
THE annual meeting of the Executive Committee of the Photographers' Association of America was held on January 30th at the Hotel Rozier, St. Louis, Mo. The Committee is composed of Adam Heimberger, President; George T. Bassett, 1st Vice-President; D. R. Coover, 2d Vice-President; J. Ed. Rösch, Secretary; John S. Schneider, Treasurer, and all were present. The books of the Secretary and Treasurer were next examined and found to be correct, there being a balance of \$885.61. The



THE EXECUTIVE COMMITTEE, P. A. OF A., 1894.

resignation of George T. Bassett as 1st Vice-President was read, and, after some discussion, same was laid on the table. The bond of Treasurer Schneider having been accepted, the Committee thoroughly discussed the various exhibition classes as provided by the Executive Board of 1893. This investigation resulted in the introduction of several new classes and the revision of the rules and regulations of all previous ones.

The following were accepted and endorsed by the entire Board as being beneficial to the Association :





PRINTED ON
BUFFALO ARGENTIC PAPER.

NEGATIVE BY
PACH BROS.

LIST OF AWARDS FOR 1894.

Special Prize (handsome silver cup).—For the best illustration of "David Copperfield," "Old Curiosity Shop," "Oliver Twist," or any other of Dickens' works. One picture to be made, 13 inches or larger. Picture to be framed at the discretion of the exhibitor, with or without glass.

Genre Prize (handsome silver cup).—For three pictures made on any mat-surface paper. Subject to be selected by the exhibitor; title to be appropriately inscribed on each picture. Contact prints, 13 inches or larger. Pictures to be framed at the discretion of the exhibitor, with or without glass.

Grand Prize (diamond badge).—Portrait photography exclusively. Thirty-six pictures; exhibit to consist of twelve cabinets, twelve Paris panels, and twelve 13 inches or larger.

Class A.—One gold medal, one silver medal, three bronze medals and one diploma. Six pictures, 16 inches or larger.

Class B.—One gold medal, one silver medal, two bronze medals and one diploma. Twelve pictures, Paris panels to 16 inches.

Class C.—One gold medal, one silver medal, one bronze medal and one diploma. Twenty-four pictures, cabinets to Paris panels.

Class D.—Rating competition. Competitors in any other class cannot compete in this.

One silver medal, one bronze medal and diplomas to all over 21 per cent.

Class E.—Landscape photography. One silver medal, one bronze medal and one diploma. Twelve pictures, 7 inches or larger.

Class F.—Landscape photography with figures introduced. One silver medal, one bronze medal and one diploma. Twelve pictures, 7 inches or larger.

Class G.—Interiors. One silver medal, one bronze medal and one diploma. Twelve pictures, 9 inches or larger.

Class H.—Marine views. One silver medal, one bronze medal and one diploma. Twelve pictures, 9 inches or larger.

Class I.—Architectural views. One silver medal, one bronze medal and one diploma. Twelve pictures, 9 inches or larger. This class is to consist of views, where the building or detail of building is the main purpose of the picture.

Class J.—Plain enlargements made upon any brand of paper. One diploma. Six pictures, 21 inches or larger. Open to all competition.

Class K.—Colored pastel enlargement. One gold medal and one diploma. One picture, 24 inches or larger. Original to accompany portrait.

Class L.—Black or sepia enlargement (finished). One silver medal and one diploma. One picture, 24 inches, or larger. Original to accompany portrait.

Class M.—Foreign exhibit. One gold medal, one silver medal, and one diploma. Best collection of photographs, framed or unframed, to be delivered to the Association free from all charges.

Class N.—One diploma. Best improvement in photographic appliances introduced since the last Convention.

Class O.—One diploma. Most tastefully arranged exhibit.

The following resolutions were adopted, and will be strictly enforced at the St. Louis Convention. All manufacturers or dealers who offer special prizes for exhibits made on or with their product must deposit such prizes, money or otherwise, with the Treasurer of the Association previous to the opening of the Convention, to be awarded by the Treasurer according to the decision of the judges, and all competitors must be members of the Association.

By unanimous consent the executive officers decided not to compete for any Association prizes.

The following committees were appointed: Prizes and Badges—Adam Heimberger, J. Ed. Rösch. Railroads—John S. Schneider. Hall Accommodations,

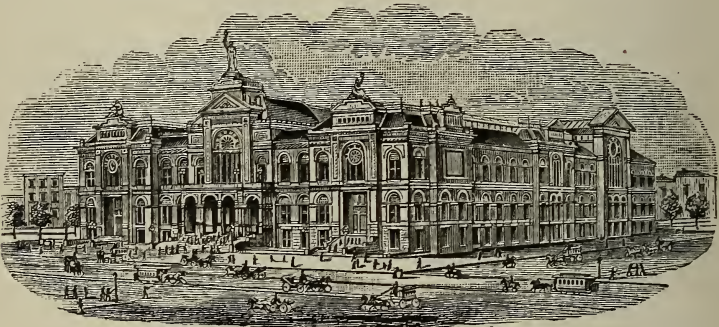
Printing, Hotel Accommodations and Stenographer—J. Ed. Rösch. The Art Department will be in charge of D. R. Coover.

It was deemed advisable to strike out the employees' classes, past experiences showing lack of encouragement in this direction.

Mr. Bassett's resignation was then taken up, and it was unanimously agreed that, Mr. Bassett being nominated and elected at Chicago in good faith by the members of the Association before he occupied his present position, and because of his executive ability to fill the office entrusted to him to the credit of the Association, it is deemed inadvisable to accept his resignation.

The next order of business was the discussion of plans for a series of entertainments and an evening session. The Executive Committee desire to say that they will do their utmost to make the next Convention a pleasurable and an instructive one to all who attend.

The Convention will be held at St. Louis Exposition Hall, July 24th to 27th, inclusive.



ST. LOUIS EXPOSITION AND MUSIC HALL.

RULES AND REGULATIONS.

Exhibitors for the Grand Prize cannot exhibit in Classes A, B and C.

All photographs for Association prizes must have been made from negatives taken since the last Convention.

The one dimension given applies to either length or breadth of pictures in all classes.

Should any exhibitor or exhibitors use their influence in any way, directly or indirectly, with the judges during their term of office in favor of any exhibit, it shall be the duty of the judges to strike their exhibit or exhibits from the list.

Grand Prize and Classes A to I to be displayed with or without frames; but the Executive Committee beg to suggest that all pictures over 30 inches be framed in 1-inch oak frames, with or without glass.

MARKINGS TO BE CONSIDERED IN ALL CLASSES.

Special and Genre Classes.—1st, illustrative; 2d, originality; 3d, photographic result.

All Portrait Classes.—1st, posing; 2d, lighting; 3d, chemical effect.

Class E.—1st, pictorial effect; 2d, chemical effect.

Class F.—1st, pictorial effect; 2d, lighting; 3d, chemical effect.

Class G.—1st, technique; 2d, chemical effect.

Class H.—1st, pictorial effect; 2d, chemical effect.

Class I.—1st, pictorial effect; 2d, chemical effect.

Class J.—General effect.

Class K.—1st, color; 2d, likeness; 3d, artistic effect.

Class L.—1st, likeness; 2d, artistic effect.

Class M.—1st, posing; 2d, lighting; 3d, chemical effect.

Class N.—Judges to be appointed by the Executive Committee.

Ten marks to be the highest given for any one point judged; consequently thirty marks is the highest that can be given to any one picture.

Cabinets and Paris panels to be judged as an exhibit, not as individual pictures.

Competitors in all classes, except Class M, must be members residing in the United States or Canada.

All exhibits must be shipped to reach the Exposition Building by July 23d, and all charges paid.

Application for space must be made to J. Ed. Rösch, 1203 Olive street, St. Louis, Mo.

Entries to close positively on Saturday, July 21st. No space will be allotted for exhibits after that date.

Appointment of Judges.—Fourteen members (non-exhibitors) to be selected by the executive members on the morning of the first day of the Convention. Ten of said fourteen to be elected in open meeting by ballot, five of ten so elected to be selected by lot, the five thus elected to report for instructions to the Secretary immediately after election.

Each judge to be compensated to the amount of \$25 for his services.

Duties of Judges.—The judges must examine and judge all Association classes. Exhibits to be examined separately and individually; judges to hand in a sealed report of their markings on or before the afternoon of the third day to a disinterested person, to be accepted by the Association in open meeting, and who will then compute the total.

DON'T MISS THE ST. LOUIS CONVENTION.

LANTERN WORK.

LANTERN SLIDES BY REDUCTION.

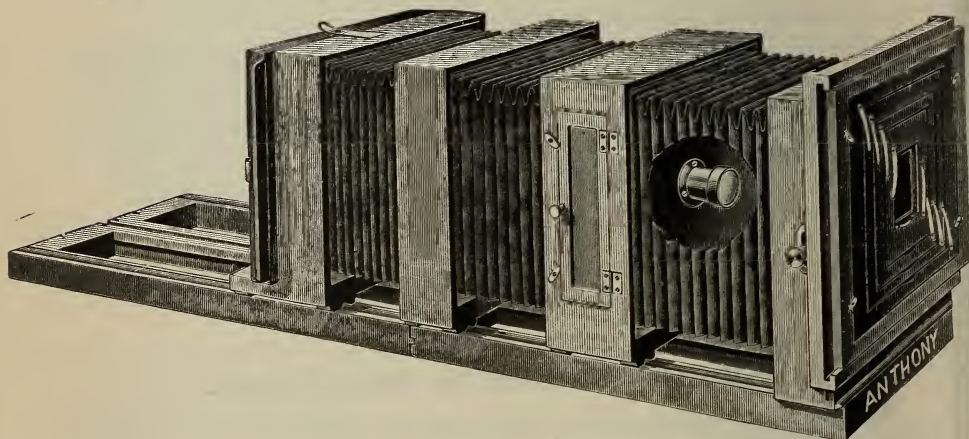
WE have already discussed in a general way the production of lantern slides in the printing frame by the "contact" method, and have pointed out certain deficiencies which make the "reduction" method the more satisfactory. Without doubt the latter involves a little extra preparation and perhaps a slight outlay, but the process itself is perfectly straightforward and as easy as the contact method. It consists in photographing the negative, reducing it to a size such that the whole of the subject may be included within the limits of the mask it is intended to employ.

At first sight it would seem to be necessary simply to place the negative in the window and photograph it. Something certainly would result, but not the ideal lantern slide. A blocking out of the rest of the light from the room partly removes the trouble, and the placing of a mirror or sheet of white cardboard at an angle of 45 degrees with the negative insures an even illumination and an elimination of the disturbing influence of neighboring buildings. The production of a lantern slide under these circumstances is not a very difficult process.

When the blocking up of the windows is not possible, a light framework is fitted up, permitting of the support of the negative in a position parallel to the ground-glass of the camera. A board some 3 or 4 feet in length answers for the base-board. Strips nailed along the length will serve as guides to keep

the camera in position, and two uprights with cross-pieces will hold the negative, the film side of which must be towards the camera. The space between the camera and the negative is covered with a cloth, or, better, with a screen made by bending thick millboard twice. The base-board is set at such an angle that the open sky is the only background to the negative, or else the cardboard reflector, previously alluded to, is used. The camera is moved and focused until a sharp image of the proper size is in the correct position on the ground-glass. The plate-holder is then inserted and the exposure made. A mask pasted on the ground-glass is the best guide for size and position.

Without doubt, the most satisfactory instrument for the production of lantern slides by reduction is the copying camera shown in the figure. Kits of various sizes admit of the employment of any of the regular sizes of plates. The lens is shown in the center partition, while the holder at the back will also readily accommodate various sizes of plates. With an instrument of this character, perfect stability is ensured, and adjustment is very easily performed. Copying and enlarging is also possible.



When making slides at night, certain precautions have to be taken to prevent uneven illumination of the negative. A lamp, placed behind the negative, permits of accurate focusing; but the image of the flame is distinctly visible. Diffusing screens between the light and the negative mend matters considerably. These screens may be sheets of ground-glass or of tissue paper. Perhaps the best screen is made by placing tissue paper between two pieces of glass, held together by elastic bands. By experiment, the exact number of sheets is ascertained. Another method is to place a sheet of cardboard, bent to a semi-circle, behind the negative and let it reflect the light of two or more lamps. Any device will answer that will give the best even illumination.

The source of artificial light to be used is any at the operator's disposal. Magnesium ribbon, or even the flash light, will answer; but neither of these are very satisfactory. A good oil lamp, with a ground-glass globe, is of excellent service.

The remarks already made on the development of contact-lantern slides apply equally here. The subject of exposure we have not touched upon. It is a matter for experiment, but by using the same illuminant always, a few trials will suffice to give a very accurate estimate of the necessary time.

INTERESTING lantern slides may be made by laying skeleton leaves between two lantern cover glasses, and binding in the usual manner. Edwin D. Partlett, writing on this subject in *The Optical Magic Lantern Journal*, says: "These skeleton leaves can often be found in damp forests, but they can also be made artificially from the leaf picked green from the tree. To prepare the skeleton leaves artificially they should be macerated in rain water in a warm place. A developing dish is a suitable vessel for the purpose. Let them remain until putrefactive fermentation takes place, when the soft parts are easily separated from the fibrous by washing in fresh water, blowing on them with a pair of bellows, and then gently pouring a small stream of water from a narrow spout upon them. Care must be taken to remove every particle of the soft parts with a fine needle or camel's hair pencil, after which first wash the skeleton leaves in fresh water, then with a weak solution of chloride of lime, and expose on a stout paper under a wire cover in the sun to bleach. When white enough they must be washed with dilute hydrochloric acid (1 to 60 parts of water), dried and mounted. Leaves can also be skeletonized by burying them in a box of damp sand or in very light soil.

"A number of slides of carefully selected leaves prepared in this way would be of great help for a teacher to illustrate the structure of the leaves for botanical classes."

WE are in receipt of a list of World's Fair lantern slides, made by John Carbutt, Jr. The list comprises upwards of four hundred, selected from some eight hundred negatives, made by Mr. Carbutt, Jr., whose presence at the World's Fair for six months gave him unusual opportunities for selecting and photographing the World's Fair buildings, etc., under the most favorable conditions of light. The set includes views on the Midway Plaisance, of the State, foreign, and miscellaneous buildings, statuary, and a general series on and around the lagoon. These may be obtained from our publishers.

BINDING LANTERN SLIDES.

WRITING on this subject in *Photographic Scraps*, Technique remarks :

"As practiced at present, the method adopted is to bind with strips of black or other dark-colored paper. Probably this serves the purpose where slides are seldom handled, but we must all of us have seen many slides with the bindings worn away, or torn off, or separated from the glass by reason of non-adhesion, or all these things combined. The ragged condition of such slides is not only detrimental to their appearance, but is also injurious to their welfare, for dust gets in between the glass, and frequently moisture finds its way there also, and when the slides are placed in the heat in the lantern, steam forms where the moisture was. Finally, when the paper binding gives way, the covering glass often becomes detached. For some time I have been experimenting upon different styles of binding, and I have settled down to the use of tape. If you go to the small-ware shops, and ask for narrow black tape, they will show you a drawer of various widths. I select one of three-eighths of an inch wide, of a thin, hard-glazed quality. These tapes are sold in pieces of a dozen yards for 1 penny. You can cut four bits to go round the four sides of a slide, or you can make one piece do the job. If you are dextrous and neat in your work,

the latter will prove the most satisfactory. Whichever you adopt, you must use starch paste as your sticking substance. Glue or gum are useless ; shoemaker's paste will do, as it will stick to glass, but starch is the best, I think. The starch must be very thick, and you will need a small sash tool with stiff bristles to spread it with. Lay the length or lengths of tape on a piece of brown paper, and spread the thick starch on the dull side of the tape ; let it lie a minute, and then give it another daub. When quite limp, and with a good coat of starch, place the slide on edge on the tape, and begin to bind round. If you cut four pieces, they should be fully one-eighth of an inch too long, as they shrink when wet with starch. If you use only one piece, starch it an inch too long, wind it round edges, and then snip off with scissors, and finish the join. In a warm room, starch will set pretty quickly. You can keep half a dozen slides going by squeezing the tape to the edges of the glass until safely set. When set and quite dry, you can clean off both sides of the glass in a way you dare not venture to attempt near a paper binding. Starch, when dry, is pretty insoluble, and the edge of the tape shows no disposition to fray or rub up, as paper would do. One great advantage of a tape binding is the greater safety of the slides when packed and squeezed against each other. The dull sound a slide makes if dropped, when it has been tape-bound, in comparison with one bound with paper, will convince any one that tape is far superior to paper, or to any metal binding. I have alluded to black tape. I don't know that there is any particular merit in its being black, beyond its durability ; but any other color or tint may be used so long as the tape is thin and hard, glazed on one side, and absorbent of starch on the other.

"Tape-bound slides can be coated with thin shellac varnish, to exclude the air, and this process is alike suitable for the binding of transparencies or for *passe-partouts*, or opalines which are to be framed."

JOTTINGS FROM GERMANY.

WATERPROOF enameled card mounts in all colors are on the German market, and are said to be greatly superior to the ordinary mount. One of the principal advantages of a mount of this character is that it is possible to wash it without detriment to color, gloss or appearance.

HESSEKIEL's new platinum paper is highly praised in the German journals. There still remains the difficulty of correctly estimating the duration of printing. The paper is exposed and the image subsequently developed by steaming, exactly similar to the Pizzigheli and Climax platinum papers. Dr. Hessekiel, instead of developing over a vessel filled with boiling water, directs a current of steam with full force against the picture, keeping this latter in constant motion. The scarcely visible image develops up very rapidly. The black specks, due to the impact of hot water splashed up by the bubbles of steam, are avoided by using a flask, the neck of which is fitted with a cork and bent tube. Prints that were not sufficiently intense are finished by an after-development process. Dr. Hessekiel recommends the following :

Neutral potassium oxalate solution (1 to 3)	125 parts.
Sulphate of iron solution (1 to 3)	20 to 25 "
Potassium bromide solution (1 to 10)	3 "

The effect of this intensifier is surprising. Many prints in the experiments made rapidly became gray and had to be immersed in a dilute solution of hydrochloric acid. A larger proportion of sulphate of iron will prevent this gray coloration. The solution is used repeatedly, the prints being finally immersed in diluted hydrochloric acid, 1 to 10. Whatever defects arise are due to over or under-printing, or to the prolonged action of moisture. If kept properly and manipulated carefully, the results are satisfactory.

RED, yellow or green fog may be removed by soaking the negative for five minutes in water, and then immersing it in bromine water. The formula given is as follows :

Bromine water.....	3 parts.
Bromide of sodium.....	3 “
Water.....	100 “

The negative is left in this bath for some ten to fifteen minutes. The picture will bleach. The plate is then well washed and re-developed.

M. HERMITE, writing on combined iron-eikonogen developer, asserts that sulphate of iron solutions keep much better when they contain eikonogen. The solution is made up in the following way: Make up a saturated solution of sulphate of iron, adding a few crystals in excess of the amount required. To 100 cubic centimeters add 2 grams of tartaric acid, and then expose the solution to light for one day. Then add 10 cubic centimeters of a solution of eikonogen, 8 grams; water, 100 c. c. The mixture is first white and opalescent, but changes to a green, finally becoming reddish brown. It is then filtered, and is ready for use. For development, mix 50 c. c. of a saturated solution of oxalate of potash with some 8 to 10 c. c. of the iron-eikonogen solution, and proceed as usual.

FROM E. Gaillard's photo-chemical establishment in Berlin we have received a pamphlet containing some very handsome illustrations in half-tone. The screen negatives used are of their own manufacture, and the results show them to be of the finest quality.

Professor ALEX. LAINER, writing on his experiments on the action of castor oil and glycerine, which are frequently used in the manufacture of collodio-chloride emulsion papers, states that the necessity for the presence of these substances depends upon the properties of the collodion used, the quantity and quality of the chlorides and the quantity of citric acid. If a large quantity of castor oil be mixed with plain collodion, a leathery film is finally produced which is not easily penetrated by liquids. The effect of this large quantity would be, therefore, to greatly lengthen the time of toning. The principal use of the oil is to prevent the cracking of the paper, by keeping it flexible and supple. Collodion papers, to be satisfactory, should contain some hygroscopic substance, and glycerine is used to bring about this result. Lainer uses glycerine mixed with an equal bulk of alcohol. Not more than 3 parts of castor oil should be added to every 100 parts of emulsion.

THERE are at present in Berlin 264 photographic galleries, 43 establishments

engaged in photo-mechanical processes and about 250 factories and workshops exclusively devoted to the production of photographic apparatus and supplies.

THE following is recommended by Professor Alex. Lainer as a durable, slow-acting reducing bath:

Potassium iodide.....	10 grams.
Hypo, (1 to 4).....	1,000 c.c.

The reduction proceeds gradually without loss of the more delicate detail. After an hour the action can be observed, and in from 8 to 10 hours even dense fog will disappear. The gelatine film is not loosened; in fact, a hardening can be observed. Iron, copper, and mercury chlorides, if added to the fixing bath, will also have a reducing action, but are less applicable because they react with the hyposulphite of soda. No advantage is gained by using a larger quantity of potassium iodide.

To prove the presence of hyposulphite of soda in water and to find out whether plates or prints have been thoroughly and sufficiently washed, a solution (A) of permanganate of potassium is prepared in distilled water, 1:1,000, and a solution (B) of caustic soda, 1:100. Of the washings which are to be examined, a few cubic centimeters are poured into a beaker glass, and about 3 to 4 drops of solution A and same quantity of solution B are added. If hypo is present, the pinkish colored solution will change quickly to green. If the washings contain only a very small quantity of fixing soda, it will take several minutes before the green coloration takes place. In case only slight traces of the fixing soda are present, the mixture will lose its pink color and become blue.

THE FIRST PHOTOGRAPHER.

UNDER this heading W. H. Harrison, in *Photography*, gives the following summary of the career of the first man to introduce the use of the salts of silver into photography.

The first photographer, Johann Heinrich Schulze—sometimes spelt Schultze—was a professor of medicine in the University of Halle, and he wrote a great number of medical works, most of which are in the British Museum Library. He was born at Colbitz in the Duchy of Magdeburg, May 12, 1687. When at school, and before he was ten years of age, Corvinus, the priest of his native hamlet, was struck with his ability; indeed, one day he found him in the garden studying a Greek testament. His father was a poor tailor at Colbitz. In 1697 young Schulze was sent to the Royal Pædagogium at the University of Halle to continue his education. In 1701 he began the study of Oriental languages, and in 1704 he was admitted into the University of Halle as a student of medicine; he was trained by Professors Stahl, Richter and Eckebrecht; he, at the same time, gave some attention to antiquarian research, and to Rabbinic lore. In 1708 he accepted an appointment as teacher in the school of the University, and worked in it for seven years, at the same time carrying on the study of several Eastern dead languages. He then attracted the attention of Frederick Hoffman, the Boerhaave of Germany, who engaged him to aid him in his literary and medical work. He made so much progress that in two years he took the degree of Doctor of Medicine, and shortly afterwards began to obtain public

reputation because of his medical writings. After his marriage in 1720 to a relative of Corvinus, he was appointed Professor of Anatomy at the University of Altdorf. In 1729 he was appointed Professor of Greek, and, later on, that of Arabic. The Prussian Government, in 1732, appointed him Professor of Elocution and Antiquities at the University of Halle. In 1738 he was nominated a Foreign Member of the Academy of Sciences, of St. Petersburg, as successor to Bayer, and in 1767 he was Professor of Theology at Halle. He died October 10, 1744. Schulze was the first to print an image of an object by the agency of light. In 1727 he poured nitrate of silver upon chalk, proved that its darkening in sunlight was due to light and not to heat; then he printed upon the deposit the image of a piece of string tied round the containing glass. This was the first photograph ever taken in the world. Next he pasted printed matter round the glasses containing the deposits, and photographed words and sentences.

HIGHLY SENSITIVE COLLODION EMULSION.

THE publication of Dr. Hill Norris' process for the production of a highly sensitive collodion emulsion induced Dr. David, of Paris, to test the three methods described in the patent. He could not obtain a satisfactory result, but by making some alterations he has succeeded in preparing a bromide of silver collodion emulsion, the sensitiveness of which increases gradually to 22 or 23 degrees Warnerke.

The method adopted is as follows: Upon a horizontally adjusted glass plate, size 18 x 24 cm., are poured 25 c.c. of collodion, which contains per liter 18 grams of silver nitrate and 7 to 8 grams of pyroxyline. After the film has coagulated sufficiently, it is changed to a bromide of silver film by treatment with the following bath:

Potassium bromide.....	80 to 120	grams.
Potassium iodide.....	.01	gram.
Gelatine.....	2	grams.
Distilled water.....	1,000	c.c.

A completely opaque film must be obtained. It is sensitized by leaving the plate for a longer or shorter time in the following:

Potassium bromide.....	18 to 25	grams.
Gelatine.....	1	gram.
Distilled water.....	1,000	c.c.

The sensitiveness increases with the duration of action and the temperature of this bath. At a temperature of 70 to 75 degrees Cent., the time of action must be about two hours; at 90 to 95 degrees, about one hour.

Upon looking through the film, it will be observed that the grain becomes gradually larger until the granularity is distinctly visible to the eye. Accompanying this increase in the size of the grain is an increase in the sensitiveness of the film.

After the plate has reached the desired stage, it is washed and dried. Contrary to what might be expected, the collodion film does not exhibit the slightest tendency to leave the plate at a temperature of 100 degrees Cent., provided that the surface of the plate has been thoroughly cleansed.

Plates prepared in this way can be developed very quickly, washed and fixed. The negative is ready for printing in ten minutes. Varnishing is unnecessary, as the collodion film is very hard.—*Photographisches Archiv*.

BORIC AND CITRIC ACID TONING AND FIXING BATH.

BY J. JOË.

IN his interesting article on this subject in the *Photographisches Wochenblatt*, Herr Gaedicke states that hyposulphite of soda is not decomposed by boric acid, and that a sulphur toning is, therefore, not possible. I am of the same opinion, but the use of boric acid is not at all essential ; and, if very purple tones are not required, sodium borate, or, as it is commonly termed, borax, serves the purpose just as well. Experiments with this latter substance gave handsome brown and blue tones, and by the addition of acetate of soda the popular blue tone was obtained. No deposition of sulphur in the stock bottle was noticed, and specially made tests with prints toned in this bath showed entire absence of precipitation of sulphur or sulphur toning. The bath does not give an acid reaction.

But the new boric acid combined bath may exercise an injurious action. This does not arise from the presence of boric acid, or borax, but is due to the substances used to give durability to some sensitized products. If the print is placed in the combined bath without a preliminary washing, the solution of hyposulphite of soda will, of course, at once penetrate the paper and film. Here it will meet with the citric or tartaric acids used in the preparation of the paper. The consequence most probably is an immediate decomposition of the fixing soda, resulting in a separation of sulphur, and along with this will proceed a sulphur toning. The amount of precipitated sulphur is, of course, extremely small, but is more than sufficient to cause the spoiling of the picture. It is a very difficult matter to wash out this sulphur, and, if the film is allowed to dry, it will lay on the surface as a scum. If this precipitate is removed, the durability of the print will be increased. If the film be very thin and contain but little acid, the sulphur will probably remain inside, particularly in a slightly porous film like collodion ; but the result will be the same if the print is not protected from the atmosphere by a coating of varnish. We doubt whether the sulphur precipitated in the bath itself will penetrate the film and cause the above-mentioned destruction. The sulphur that does the damage is that which is formed in the inner part of the film, and which is subsequently brought to the surface. If it forms in the bath itself, the precipitate will be dense upon the picture. If a print is placed in a fixing bath for a few minutes, rinsed in water and then placed in acidified water, it will be noticed that the yellow tone passes into a brown, and, if the water be strongly acid, into a dark blue, the result of sulphur toning. For this reason acid toning and fixing baths, containing little or no gold, give good-looking tones. A non-injurious combined bath, therefore, always requires a preliminary bath of dilute ammonia or soda in order to neutralize the acid.

A double fixing, hence, is unnecessary. Either no preliminary bath is used, and sulphur toning occurs, or a preliminary bath is used and then it is only necessary to add a little hypo occasionally to the toning and fixing bath. It is always better not to use a combined bath too often, but to renew it from time to time.—*Photographisches Wochenblatt*.

OUR ILLUSTRATION.

WE congratulate our readers and ourselves on having secured for our frontispiece a photograph from the world-renowned studio of Sarony. The pictures illustrate the average run of celebrity work from this gallery, and will, we feel sure, find favor everywhere. The prints are on American "Aristo" paper, and



demonstrate that special negatives are not necessary for use with this product. The negatives used are all regular albumen negatives, but we venture to assert that the "Aristo" brings out the detail and gives a general effect impossible to obtain with any other paper.

Napoleon Sarony was originally in the lithographing business, under the firm name of Sarony & Major. Retiring, in 1858, from active participation in the concern, he spent some time traveling through Europe. Losing everything during the War, he acted on the advice of his brother, one of the oldest photographers in England, and in 1862 opened a gallery in Birmingham, England. In 1867 he returned to this country, bringing with him many novelties. He introduced the Sarony posing apparatus, and brought the first retouching frames here. He at first engaged in the manufacture of albumen paper, and in

1868 opened a gallery at 630 Broadway, New York. His son, Otto Sarony, a portrait of whom we reproduce in half-tone, was then about twenty years old, and applied himself diligently to the business, going through every branch, from silvering the paper to operating, thoroughly familiarizing himself with every detail, and fitting himself for the onerous and responsible position that he now occupies. In 1869 the business was moved to 680 Broadway, and in 1876 to the present location, 37 Union Square. Three floors, 80 feet deep, and a large printing roof, are required for the conducting of the business. Some 300,000 negatives are stored therein, and include practically every celebrity resident in or visitor to this country.

Napoleon Sarony, though seventy-three years of age, is more hale and hearty than many a man of fifty, and gives personal attention to nearly all the sittings. As a painter, he enjoys a high reputation, and his artistic skill is demonstrated under the skylight. Of Otto Sarony but little is heard by the outside world. Possessing a thorough knowledge of the requirements of every department, he manages the whole of the business part of this large establishment, and his kindly, courteous manner has done much towards gaining for the house of Sarony the high reputation which it now enjoys.

THE LARGEST PHOTOGRAPHER IN THE WORLD.

To St. Louis belongs the honor of having produced the "Largest Photograph in the World," but Dover, N. H., can claim credit for having in its midst the photographer of the greatest size and weight. W. H. Swan was born in Woodstock, Vt., some thirty-six years ago, and began photography at the age of sixteen. New England knows him well, not only for his remarkable personality, but for his excellent work. New York and Massachusetts photographers will recognize him, and can testify to his thorough insight into the details of the photographic processes. For twenty years he has stood behind the camera, losing hardly a day. To say that his remarks carry weight may sound facetious, but his comments given below will be recognized as sound and to the point.

The half-tone reproduction is from a picture made recently by Mr. Swan, and gives an idea of his regular work.

Commenting on it, he says:

"What shall I write for details and method of working that will be of any interest to the fraternity of which I have so long been a member. Twenty years' experience under the light has taught me that 'Brains' is one of the most essential things to mix with all kinds of chemicals, and also very handy to have in all branches

of photography. The reception costume worn by this subject was a very pale-blue crepon, with sash and gloves to match. The lens used was No. 5, Third Series,



Portrait Euryscope, plate Seed 26x, exposure two and one-half seconds, and pyro was the developing agent. My light is of medium height, north, top and side, and my curtains are of white muslin. These, with my head screen, without which I could not keep house, enable me to get almost any lighting I desire. While I consider my light a very good one, I believe it possible to get very effective results under almost any light if intelligently understood.

"I submit a few reasons to the fraternity to which I consider my success in photography largely due. First, I have made a study of every branch of photography, so as to be as nearly as possible master of it all. Second, if obliged to



hire, to hire only skilled labor. Third, to buy only the very best of all kinds of goods. Fourth, to keep my eyes and ears open and get everything from every other artist that is worth having.

"A few such reasons as the above, coupled with a clean studio, gentlemanly and courteous treatment to all, and a paramount desire and determination to make my productions worthy the attention of the best people of our cities, enable me to pay my stock bills and get good prices for my work. Brother photographers, let us stamp upon our banner 'Good Prices,' with productions worthy the name of 'A Work of Art.'"

Mr. Swan stands 6 feet 9 inches in his stockings, and weighs 335 pounds.

OUR BROMIDE ILLUSTRATION.

OUR second full-page illustration is from a negative by Pach Brothers, who are well known, not only for the high excellence of their portrait work, but for their successful outdoor photography. The prints are on the Buffalo Argentic Paper, to which we have previously alluded in the BULLETIN. This paper is made in four grades; on thin, flexible enameled paper, with flesh-tinted surface, for contact printing and small enlargements; a heavy paper, with an enameled pink surface, for enlargements, and suitable also for finishing in transparent oils and water-colors; a heavy, rough-surface paper, for enlargements and for finishing in crayons, pastel, water-colors or ink; and a thin paper, with a mat surface, for contact work and small enlargements.

The prints used in our illustrations are made on "light-smooth" paper. Three different negatives were used to print the large edition necessary, the exposures being four, six and eight seconds respectively. The prints were developed in strips of four in a tray capable of holding three or four strips at one time. The absolute uniformity in the whole batch of prints is thus accounted for. A preliminary test gave the required amount of exposure, the source of illumination being always the same. The exposure being constant and the developer practically so, the work of printing became comparatively easy and almost mechanical. In making a large number of prints from one negative, it is of the greatest advantage to have an apparatus by which the bromide paper can be used in rolls and drawn under, and in contact with, the negative, being taken up again after exposure. Such a piece of apparatus was used in the making of these prints. The Hoover Printing Machine is a compact device for producing contact prints from negatives "2 x 2" up to and including "6 x 8" at the rate of from two hundred to three hundred and fifty per hour, using an ordinary No. 2 kerosene burner, or, if preferred, gas may be used instead. Any good bromide paper can be used, either in rolls or strips. Prints on celluloid can be made as readily as on paper, but the machine was particularly designed for using the Buffalo Enameled Paper, on which prints unequaled in quality can be made with the utmost ease, uniformity and certainty.

The device consists of a box divided into three compartments, those at the ends being for the accommodation of the sensitive paper; the one at the left for the roll of unexposed paper, and the one at the right for storing the exposed portion until ready for development—the center compartment being occupied by the mirror and diffusing glasses, so arranged as to secure absolute uniformity of illumination over the whole negative. The lamp is enclosed in a japanned section fastened opposite the mirror and at right angles with the body of the machine.

The paper is placed in the left compartment if a roll is used, and the end passed up through an opening in the top of the machine; thence between the first set of rolls and over the negative, then between the other set of rolls operated by the crank.

Contact is secured by means of an adjustable pad held by a universal joint and operated by a lever which performs a double duty, viz.: When turned back away from the operator it forces the pad down and holds the paper securely to surface of negative; when brought forward it throws into gear the measuring device, which allows the proper amount of paper to be

drawn out, when the rolls will cease to revolve, though the crank is turned until the lever is thrown back and the paper exposed, when, by bringing the lever forward again, the same amount can be fed out; the exposure is made by means of a shutter operated by a push-button, and is under the control of the operator. The amount of paper drawn out is regulated by a device on back of machine, set to a scale and adjustable to the $\frac{1}{32}$ of an inch.

The negatives used are the ordinary first-class studio negatives, and the prints certainly speak strongly in favor of the Buffalo Argentic Paper. The identical machine with which these prints were made will shortly be placed in the show-room of our publishers.

BROMIDE PRINTING.

BY D. W. C. HOOVER.

I HAVE been not a little surprised at the trouble taken by photographers in producing the much-admired mat-surface photographs. The other day a friend in the business called my attention to a batch of prints, upon which he had obtained a mat-surface effect by squeegeeing them down upon a piece of ground glass, that had previously been prepared with talc and flowed with plain collodion. These were fairly good specimens. Another firm in this city send their negatives out of town and have platinum prints made from them. These are certainly the more desirable. But why take all this trouble when a much finer mat-surface picture in every way can be produced on bromide paper of the proper weight and texture, and a picture, too; that is susceptible of almost any correction with the pencil or brush—in fact, a print at once artistic, pleasing and permanent?

I am quite certain that if photographers realized the ease and certainty with which prints can be produced on this paper we should see more of them in our leading galleries. I am inclined to think that one of the chief reasons why argentic and bromide papers have been so little used in regular work is that photographers look upon these papers as only intended for enlargements. The fact is that contact prints of the highest excellence may be made with but very little trouble. I look confidently forward to a time in the very near future when we shall get our mat surface photographs without waiting old Sol's pleasure.

The prints were developed in an oxalate of iron developer, made up as follows:

No. 1.	No. 2.
Oxalate of potash 5 pounds.	Sulphate of iron 1 pound.
Oxalic acid..... 600 grains.	Sulphuric acid, c. p. . . . $\frac{1}{4}$ dram.
Water 240 ounces.	Water 32 ounces.
No. 3.	
Sulphite of soda..... 2 ounces.	Bromide of ammonium. 160 grains.
Citric acid..... 160 grains.	Water 16 ounces.

For a 20 x 24 print, take of No. 1, 6 ounces; No. 2, 1 ounce; No. 3, from 2 to 4 drams. When development is complete, pour off the developer and flow over the print the clearing solution, prepared as follows: Acetic acid, $\frac{1}{4}$ ounce; water, 60 ounces; use from 20 to 30 ounces for each flow, and thoroughly immerse back and face for one-half minute; pour off and repeat the operation twice; rinse with three changes of clear water, then immerse in fixing bath, prepared as follows: Hyposulphite soda, 1 pound; water, 64 ounces; saturated sol. alum, $\frac{1}{2}$ ounce; leave in this from ten to fifteen minutes, making sure it is completely covered; after fixing, wash thoroughly, for at least two hours, then hang up to dry or mount at once. Keep developer and all solutions below 60 degrees Fahr.

CORRESPONDENCE.

COMPLIMENTARY.

THE volume of the BULLETIN for 1893 has come to hand, and it affords me great pleasure to have the opportunity of thanking you on behalf of the Society of Amateur Photographers of New York for the handsome volume, and your kindness in presenting it. Anthony's BULLETIN is always welcome at our rooms, its arrival watched for, and it is as often, if not oftener, referred to than any of its contemporaries. Wishing you a well-deserved success in your new departure to a monthly issue,

ROBERT L. BRACKLOW,

For Library Committee.

LETTER FROM CHINA.

DEAR SIRS :

YOUR BULLETIN is a continual source of pleasure to me, and supplies just what an amateur in this part of the world wants to know. China affords a most interesting field for photography, not only for one's own personal amusement and satisfaction, but also to make known to the rest of the world what curious and interesting things exist everywhere all over the Empire. The number of amateurs among the American, English, German and other residents here is always increasing. The ubiquitous globe-trotter confronts you in the most unexpected places with his hand or his tripod camera. There are not only camera clubs among the foreigners, but among the Chinese themselves. Right away among the silk-producing districts is a wealthy gentleman, a native of this province, who has a most costly and elaborate set of photographic apparatus, with which he sometimes does good work. Photography just suits the Chinese gentleman of wealth and leisure. It is now easily learned. There are treatises translated into Chinese which are sold in considerable numbers, and contain the necessary instructions for ordinary work. Hence, as the country gradually opens, there is sure to be a growing demand for photographic goods. When the time comes that a photographic journal in Chinese is likely to pay its way, I hope to be able to start one.

My object in writing to you, however, is not to call your attention to China at all, but to two prints which are enclosed for your examination. They are specimens of "toning in two colors." The pleasing contrast between the slate color and the rich brown is worthy of notice. In most pictures it has a charming effect. One of the prints is a squatter's home inside the walls of Nanking; the other is a view on the main street leading from the north to the south extremities of this long city. Both were taken a few weeks ago, during my visit to examine the Imperial Naval College there. The effect is produced by using a double amount of gold in the sulphocyanide of ammonium bath and applying heat to about 125 degrees Fahr., taking out the prints before the toning has turned the shadows to a slate color. Perhaps some of your readers may be able to develop this plan into something of general utility.

Yours faithfully,

JOHN FRYER.

SHANGHAI, CHINA.

IMPROVEMENTS IN APPARATUS.

THE half-tone reproduction is an excellent study in posing and lighting. The position is graceful, and the whole arrangement is somewhat new.

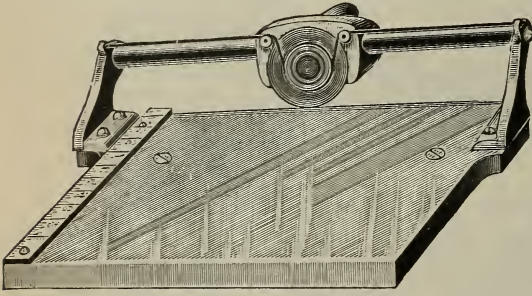


The screen used is one of the most delicate and useful screen and accessory combinations at the disposal of the professional. The center part is a regular bust background, and may be used as such. It is known as the Rococo head-ground, and is sold by our publishers for \$15.

ONE of the most recent and novel pieces of apparatus is Anthony's Film Cutter, an instrument for measuring and cutting roll films. In practice, it is found that during the rolling up of the film upon the take-up roller the punctures are apt to be squeezed back again into the plane of the film or else smoothed down, so as to be barely perceptible. Again, when the film is cut by a knife or by scissors, it frequently happens that, through carelessness or want of skill, the

cut is not correctly made. With this film cutter actual measurement is made, the cutting being done by tearing against a metal edge, just as a check is torn from a check-book by the help of a ruler. This useful instrument is sold by our publishers for 75 cents.

THE Climax Cutter is a very useful instrument. A solid iron base gives it stability, and ensures its durability. There are no pins to become loosened, and a minimum of strain on the working parts.



The cutter is a wheel made of the finest steel, and the movement is of the simplest kind. Paper, mounts or ferrotype plates may readily be

trimmed or cut with it. A scale of inches serves a useful purpose.

A SHUTTER of great utility is Blair's "two-ways" shutter. It is made of aluminium and hard rubber, has pneumatic and finger release, time stop, three standard adjustments of speed and revolving diaphragm with five apertures. These shutters are made in two styles: No. 1 Regular, 3 inches diameter, largest stop $\frac{3}{4}$ inch; and No. 2 Special, $3\frac{1}{2}$ inches diameter, largest stop 1 inch.

THE latest novelty from the A. M. Collins Manufacturing Company is the "Zelica" mount shown in the half-tone. The back is hinged to a mat and the print is placed between the two. The inner side of the mat being coated with Slee's preparation, adhesion is secured by simply moistening.



SOCIETIES.

SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.—At a special meeting held on Friday, February 2d, Mr. Otis A. Poole, of Japan, gave an interesting talk on "A Day in Yokohama," illustrating his remarks by a wonderful series of lantern slides. These were from negatives made by Mr. Poole, and were colored by Japanese artists. A very large audience was intensely interested.

ST. PAUL CAMERA CLUB.—A lantern entertainment was given on Thursday, February 1st, at the guild hall of Christ Church, the proceeds being handed over to the ladies of the Church Aid Society, to be used in relieving cases of distress which come to them. Some one hundred and fifty views of the World's Fair were shown, the work of members of the Club.

PORTLAND CAMERA CLUB.—At the annual meeting held February 6th, the following officers were elected for the coming year: President, Dr. S. P. Warren; Vice-President, Nathan Clifford; Treasurer, C. T. Whipple; Secretary, Fred. Fox, Jr.; Lantern Slide Director, W. C. King.

PHOTOGRAPHERS' ASSOCIATION OF IOWA.—The following officers were elected for the ensuing year: President, F. W. Medlar, of Spencer; First Vice-President, W. A. Reed, of Missouri Valley; Second Vice-President, J. A. Rohner; Secretary, F. Wolcott Webster, Des Moines; Treasurer, D. S. Brown, Marshalltown. The meeting for 1895 will be held at Des Moines.

HARTFORD CAMERA CLUB.—Exhibition postponed until March 13th. Pictures must be sent in on or before March 7th.

WORCESTER CAMERA CLUB.—March 7th, "Printing and Toning on Various Papers," by J. J. Alton; March 14th, "The Carbon Process," by D. F. Gray; March 21st, "Lantern-Slide Making," by Dr. G. E. Francis; March 28th, "Copying," by E. M. Wood.

The following exhibitions are announced:

America.—Seventh Annual Exhibition of Society of Amateur Photographers of New York, Photo. Society of Philadelphia, and Boston Camera Club. International. Galleries of the American Fine Art Society, New York, from April 16th to 28th. Secretary's address, T. J. Burton, 113 West 38th street, New York.

England.—Newcastle on Tyne and Northern Counties. International. Art Gallery, Grainger street, Newcastle, from April 13th to April 28th, silver and bronze medals; entries close March 28th.

France.—Lyons International Exhibition, April 26th to November 1st. Address, M. Claret Palais, St. Pierre, Lyons.

Italy.—Milan, International. Exhibition from May to October. Entries close March 15th. Address, F. Luigi, Via Principe Umberto 30, Milan, Italy.

Anthony's * Photographic * Bulletin.

EDITED BY

Prof. CHAS. F. CHANDLER, Ph.D., LL.D.,
FREDERICK J. HARRISON.

Published on the First of each Month.

An Actual Photograph in Each Issue. Readable Articles on Topical Subjects.

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Advertisements should reach us not later than the 23d of each month. It is also necessary to notify us of any alteration on or before this date.

Subscriptions to the BULLETIN will be received by all Photographic Stock Dealers in any country, by the American News Company, and by the publishers.

E. & H. T. ANTHONY & CO., 591 Broadway, New York.

QUERY COLUMN.

N. B.—We cannot undertake to answer questions of a technical character except through the columns of the BULLETIN. Correspondents will please remember this. No attention will be paid to anonymous communications.

S. A. W., TORONTO.—We will communicate with the owner of the camera in question. The next number of the BULLETIN will contain an article and several illustrations of the character you describe.

A. O.—We presume that you desire an 8 x 10 camera. The 8 x 10 Normandie has an extension of 16½ inches.

S. R. BRAILA, ROUMANIA.—Your letter answered by Mr. Shepard in this issue. Very glad to hear from you, and would like a few words from you on the state of photography in your country.

E. B., VA.—Add kaolin, and sun for a day.

BOOKS RECEIVED.

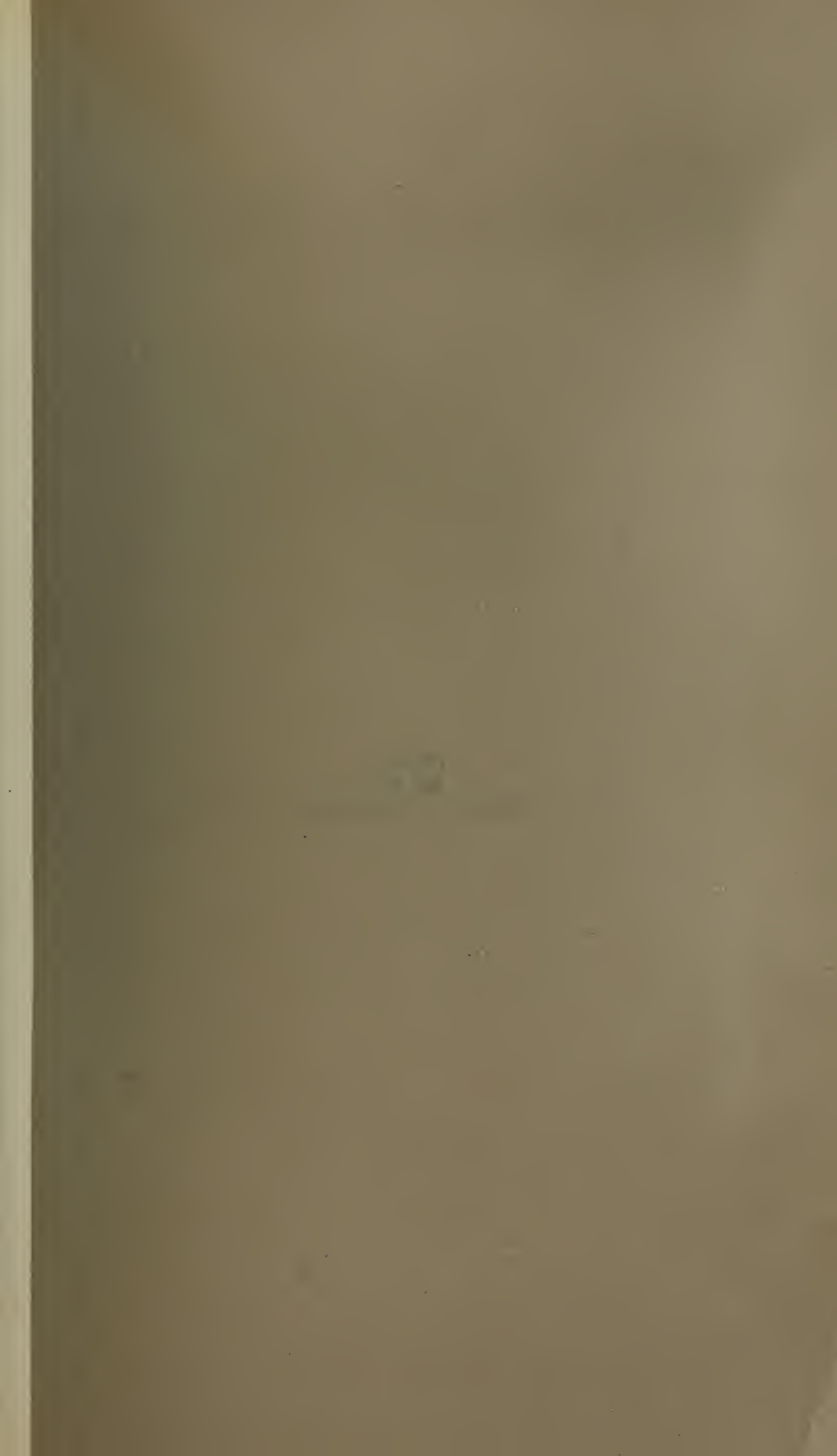
A handy illustrated catalogue, of size suitable for the pocket, comes to us from C. Weichsel, of Dallas, Tex. We notice therein many of the goods manufactured by our publishers. The list comprises everything needed by the live photographer.

A new edition of the "Professional Catalogue" has been issued by our publishers. It contains many new goods and embraces everything required by the photographer.

"The Handbook to the Photochromoscope," by Fred. E. Ives, is to hand. It is a comprehensive treatise of the subject and will be read with much interest by all interested in the problem of photography in natural colors. Mr. Ives has recently been awarded the gold medal of the Photographische Gesellschaft of Vienna for his photochromoscope.

TABLE OF CONTENTS.

	PAGE		PAGE
BACKGROUNDS	74	LANTERN WORK	91
BINDING LANTERN SLIDES	93	LETTER FROM CHINA.....	104
BOOKS RECEIVED.....	108	OUR BROMIDE ILLUSTRATION.....	102
BORIC AND CITRIC ACID TONING AND FIXING BATHS, <i>by J. Jot</i>	98	OUR ILLUSTRATION.....	99
BROMIDE ENLARGEMENTS.....	76	PHOTOGRAPHERS' ASSOCIATION OF AMERICA.....	88
BROMIDE PRINTING, <i>by D. W. C. Hoover</i>	103	QUERY COLUMN.....	108
CLOUDS, <i>by Francis P. Smith</i>	83	REWARDS FOR MERITORIOUS DISCOVER- IES AND INVENTIONS	75
COLOR PHOTOGRAPHY.....	79	SOCIETIES	107
COMBINED TONING AND FIXING BATHS	73	STEREOSCOPIC VIEWS AND HOW TO CUT AND MOUNT THEM, <i>by James</i> <i>Shepard</i>	86
COMPLIMENTARY	104	TELE-PHOTOGRAPHIC LENSES.....	76
CORRESPONDENCE	104	THE FIRST PHOTOGRAPHER	96
HIGHLY SENSITIVE COLLODION EMUL- SION	97	THE LARGEST PHOTOGRAPHER IN THE WORLD.....	100
IMPROVEMENTS IN APPARATUS.....	105	TRIMMING AND MOUNTING, <i>by Edward</i> <i>B. Miller</i>	84
ITEMS OF INTEREST.....	79		
JOTTINGS FROM GERMANY.....	94		
LANTERN SLIDES BY REDUCTION	91		





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AMERICAN ARISTO PAPER.

CHILD LIFE.

ANTHONY'S Photographic Bulletin.

EDITORS :

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

FREDERICK J. HARRISON.

VOL. XXV.

APRIL 1, 1894.

No. 4.

VIGNETTING.

By vignetting is commonly understood that method of printing by which the edges of the picture are made to pass gradually into the white of the paper. The more regular this gradation, the better the vignette. The passing of the dark into the white should be even, without a break or line of demarcation to indicate in any way that the effect has been secured by the interposition of some object between the light and the paper. A properly made vignette is the most effective of photographs, while a poor one simply ruins any beauties that may be present in the negative. Landscapes do not lend themselves very readily to vignetting. Indeed, in the majority of cases a landscape vignettied is a landscape spoiled. By this we do not mean to raise any objection to the masking of parts or to the holding back of too transparent parts by means of vignetting, but refer to the practice of making an oval vignette from an architectural study or an interior. It is in portraiture that vignetting is largely used, especially in small work, cabinets and Paris panels. Two rules have been laid down, and they are certainly rules that we can recommend. When negatives are to be vignettied, dark backgrounds must not be used. The other extreme, white grounds, must of course be avoided. The slightly tinted backgrounds, now so largely in use in this country, lend themselves admirably to vignetting. The second rule is that the vignette must not closely follow the outlines of the figure. Experience has led photographers to adopt two shapes of vignettes, the oval and the egg shape, the latter being used when it is desired to include the bust in the picture.

Vignetting may be accomplished in three ways; in the camera during exposure of the negative, by painting on the back of the negative, or by the use of vignetting glasses, papers or similar materials. Vignetting in the camera is but seldom used now. A short arm, coming from beneath the camera, carries an upright piece in which may be fixed in any position the vignetting screen. This may be a piece of cardboard, with an aperture of the desired shape cut in it.

Being out of focus, no sharp edges show on the plate. For very soft effects the screen may be moved backwards and forwards along the short arm. This method has found but little application.

The production of a first-class vignette from a negative, the back of which has been painted, is not a difficult matter. The glass side of the negative may be dabbed with black varnish, leaving a space of the desired size and shape. The edges should then be thinned down by rubbing with a wash-leather pad soaked in turpentine. A far more satisfactory material is the paste known as Strauss marl. This is a thick paste which may be thinned with water, and which readily dries, and when dry does not come away in flakes. The back of the negative is pasted over with the marl, and the vignette washed out with water, the edges of the opening being thinned down to semi-transparency. The shape of this vignette can easily be changed and the whole backing readily removed by washing under the tap. The softest effects may be obtained by making a vignette with the paste on a piece of clear glass, and thus securing two thicknesses of glass between paper and vignetter.

Vignetting glasses were at one time in considerable use, but have very properly dropped from public favor. These are pieces of flashed ruby or orange glass, the color being intense at the edges and gradually shading off to a transparent center. A separate glass is required for every variation in size and shape, and adjustment is not an easy matter. Again, the gradation was not as soft as is desirable. A more effective device is a sheet of thin lead in which an aperture of the desired shape has been cut by means of scissors. The lead, being soft and pliable, is easily held in position by bending the edges around the printing frame. The edges of the aperture may also be turned back a little.

A very good vignetter may be made by tacking on to the frame a piece of cardboard in which a hole of the desired size and shape has been cut, and grading off the edges by means of absorbent cotton (cotton wool) placed between the negative and the cardboard. Where this and the following method are employed the frame should be built up a quarter of an inch all around, so that the vignetter shall be well removed from the paper. Should a more sudden blending of the dark drapery be desired, the strip of wood on that side of the frame may be removed and the vignetter thus brought nearer to the negative. An easily made and at the same time a very effective vignetter is one which we believe to have been originated by Mr. F. H. Doyle, one of the demonstrators connected with the American Aristotype Company. A piece of cardboard is cut to the size of the printing frame, and an aperture somewhat smaller than the desired vignette is cut in it. The edges of the aperture are notched all around by scissors, except at the bottom. A sheet of pure white tissue paper is pasted over the whole. Thus far there is nothing new in the vignetter, this form having been in use for many years; but by means of a very simple addition, a variety of effects may be obtained. This addition is a piece of opaque paper folded along its length, one side of the fold being pasted on the cardboard so that the hinge falls along the bottom of the aperture. If now it is desired to make an abrupt line across the bust, the loose fold is bent at right angles to the cardboard and prevents any gradation by arresting the light. For a full vignetting the fold is bent back out of the way. Any intermediate gradation may easily be obtained by varying the length of this loose fold.

Vignettes on a tinted ground are made by removing the vignetted print from the printing frame, covering with a sheet of glass, protecting the printed portion with a piece of opaque paper, and exposing to diffused daylight until the desired color is obtained.

IN THE PRINTING-ROOM.

IN another part of the BULLETIN, G. C. Baker describes some "Printing Dodges" that will be found useful. But before attempting fancy effects, the printer should get well into his head a few points that seem simple enough, yet are often lost sight of. The negatives, as now made in a large photographic establishment, are exposed and developed so as to give the finest detail and a minimum of harsh contrasts. Slightly over-exposed and developed with an excess of alkali, the negatives are very thin, but there is every detail in the whites and in the shadows. Such a negative may be made to yield prints of the highest



quality ; or again, by careless manipulation, the efforts of the operator may be entirely nullified. Emulsion papers are steadily pushing albumen paper to the wall, and printers are apt to overlook the fact that these papers are more sensitive to light than the product with which they have worked for years. The thin negatives are specially made for the production of the best prints, and, to preserve the fine detail, the printing frames must be covered with one or two sheets of fine tissue paper. This is done, we know, in the majority of large establishments ; but, when printing in strong sunlight, one thickness of tissue paper is often insufficient. Another and more frequent cause of poor prints is the practice, often indulged in, of examining prints in strong sunlight in order to note their progress. This is a habit that cannot be too strongly condemned ; yet it is often practiced by printing "boys." The paper is placed in the frame in

diffused daylight, and the frames should be examined in the same light. Finally, it should be borne in mind that the paper is sensitive to light during the toning process and during part of the time the prints are fixing. During these processes, therefore, the prints should not be exposed to any but the dimmest daylight. These three points, then, should be observed: Do not print in strong sunlight without an adequate protection in the shape of tissue screens; do not examine the prints except by diffused light, and tone and fix in a dimly lighted room.

In this article on "Printing Dodges," G. C. Baker refers to the interposition of thin sheets between the negative and paper in order to lessen contrasts which may exist in the negative. For this purpose the so-called "mezzo" plates will be found particularly suitable. These are thin, semi-transparent flexible sheets, with a matt surface on both sides, and thus admit of any amount of blocking out or additions. The picture here reproduced in half-tone gives an idea of what may be done by the use of a "mezzo" plate in conjunction with the opaque paste known as Strauss marl. Three negatives have been used in its production. These were cut down to the desired size and fastened together with Sheplie gum paper. A piece of clean glass was laid in the printing frame and the patched negative laid on this. The face of the clear glass was daubed with the marl, and the vignettes made by rubbing away with a wash-leather pad. After printing the vignettes, the sketchy design was put in by a second printing under a mezzo plate.



THE USE OF EOSIN IN ORTHOCHROMATIC PHOTOGRAPHY.

WE are in receipt of a letter from Col. J. Waterhouse, accompanied by the request to publish the same. The subject being one of considerable interest, we reproduce the letter in full.

"*Dear Sirs,*—I have just received a copy of the "International Annual" for 1894 and beg to congratulate you heartily on its very handsome get-up and the many valuable articles contained in it. I am very sorry I was not able to add my mite.

"I regret exceedingly to have to trouble you with an entirely personal matter, but in justice to myself I am obliged to do so. In an article by Dr. H. W. Vogel, on page 143 of the "Annual," entitled 'The History of Color-Sensitive (isochromatic or orthochromatic) Photography,' I find, a few lines from the bottom of page 144, the following statement: 'Later on I sent to Col. Waterhouse for this purpose some coloring matters and among others the newly discovered eosin, in which I had observed a very strong absorption power for green and yellow although I was unable to test the same photographically during the winter at Berlin, for want of sufficient sunlight.'

"This statement would appear to imply that I first used eosin at Dr. Vogel's suggestion and with material received from him, and, further, that I have been claiming the credit of a discovery which was really due to Dr. Vogel.

"To this implication I am sorry I must give a most emphatic denial. In lapse of years Dr. Vogel may have forgotten the circumstances, but I can most sincerely declare that he did not suggest the use of eosin to me nor *to my own knowledge* did he ever send me a single grain of it. As stated in my paper read

before the Photographic Society of London in January, 1876, I got the idea of using eosin from an account I saw of it in the *American Journal of Science* for May, 1875, and at once wrote to my friend Romain Talbot, of Berlin, for a specimen of it. He sent me about 1 or 2 grams for which I paid 5 marks, or about \$1.25, and I still have the bill for it. It arrived in October, and my first experiments were made then. The first I heard from Dr. Vogel about eosin was in a letter written by him in December, 1875, acknowledging a letter from me in which I had told him of the results I had obtained and telling me that he had some of the dye, but had not been able to try it on account of the dull weather and want of sunshine. He had previously sent me samples of cyanin blue and naphthalin red, and my indebtedness to him for this courtesy was duly acknowledged in my papers on my experiments. Had he sent me eosin for my first trials, I should most certainly have acknowledged it and given him credit for any discovery made at his suggestion. I have always fully recognized his claims as the founder of orthochromatic photography and have never claimed anything for myself in the matter beyond the discovery of the valuable property of eosin of rendering silver bromide exceedingly sensitive to the yellow rays. Had I used Dr. Vogel's system of cutting off the blue rays with a yellow screen I might have done more to utilize eosin in orthochromatic photography than I did, and, as a matter of fact, it was not until Clayton and Attout Taillefer published their method of sensitizing dry plates with an ammoniacal solution of eosin that it became of any practical use in orthochromatic photography, though Ducos du Hauron and Cros had fully recognized its value as a color sensitizer.

"Dr. Vogel may possibly have sent me some of the dye, but I do not recollect receiving it, and I know that my first and other early samples were received from Romain Talbot, who himself told me recently that he did not get them for me from Dr. Vogel. I think he got it from Dr. Jacobsen or one of the other dye manufacturers whose name he mentioned in the letter of advice which is not now to hand. * * * As Dr. Vogel's statement of this point of the early history of eosin will have a very wide circulation in the "Annual," I should be glad if you would draw attention to my statement of the real facts of the case.

" Yours, J. WATERHOUSE."

TELE-PHOTOGRAPHIC LENSES.

(Continued from page 78.)

THE three half-tones which follow illustrate the increase in the size of the image obtained when the moderate power tele-photographic attachment is added to the ordinary rapid rectilinear lens. The distance from the camera to object in all cases was the same, 36 feet. The first picture is from a negative made with the regular 8 x 10 Dallmeyer rapid rectilinear lens.

The second picture was made by adding to the rapid rectilinear a 7-inch moderate power tele-photographic attachment and extending the camera until the distance from front board to ground-glass was $17\frac{1}{2}$ inches. Exposure, one second. The third picture was made with exactly the same arrangement except that the distance from front board to ground-glass was increased to $42\frac{1}{2}$ inches. Exposure, four seconds. It will be noticed that with the increase in size there

is no diminishing in sharpness ; indeed with this lens results may be obtained which in detail and quality cannot be approached by any method of enlarging.

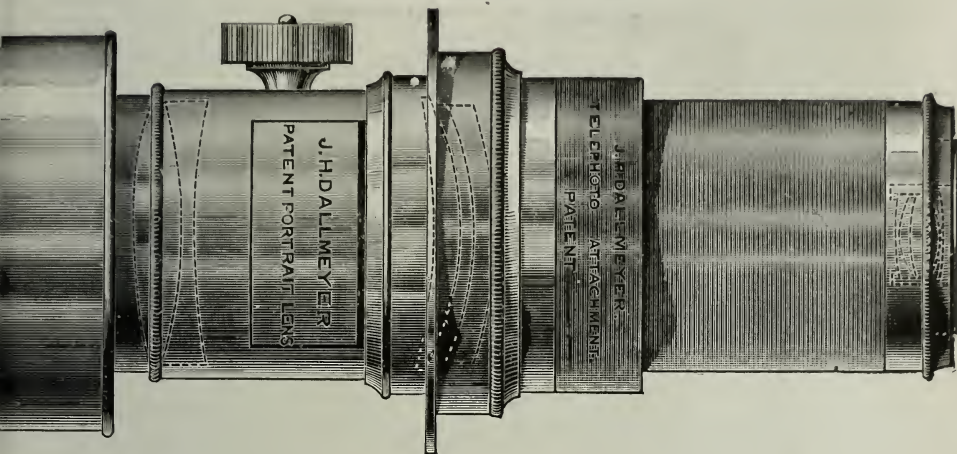


DALLMEYER'S COMPOUND TELE-PHOTOGRAPHIC LENS.

This is an instrument of much higher power than the moderate power, and consists of a Dallmeyer patent portrait lens of the B series, a very quick-working combination, to which is attached a negative element of high power. Mr. Dallmeyer says : " I have tried to make a generally useful instrument, including the greatest angle possible and rapidity consistent with a focus corresponding to four or five times that of an ordinary lens with the same camera extension. "

These lenses are mounted in either brass or aluminium and are quite light. The negative attachment projects inside the camera, the flange of the lens being

HIGH POWER TELEPHOTO



one size larger than that for the lenses to which the attachment is made, respectively.



View of a church about a half-mile distant, taken with the tele-photo lens. Exact size of image on plate.



The same object taken from the same point with an 8 x 10 R. R. (13 inches equivalent focus). Exact size of image on plate.

By the employment of the greater number of elements, greater excellence in the results is obtained, and distortion reduced to a minimum or practically eliminated.

The compound negative element consists of two symmetrical lenses, in appearance somewhat like the rapid rectilinear, but of negative focus, the lenses being so constructed that they can be mounted in close proximity to one another, thus obtaining the maximum angle.

The new negative combinations supplied to the above-mentioned lenses have been chosen to give a sufficiently valuable increase in size of image, consistent with adequate illumination. Negative elements of shorter foci can similarly be supplied to these lenses, but at the expense both of illumination and angle included.

These lenses are used in the same manner as the moderate power, *i. e.*, focusing screen drawn out until the object is of size desired, the lens focused properly and diaphragm put in place. They are *not* for instantaneous work, but for time exposures, and by their aid elegant details of inaccessible mountains and peaks can be produced, of which no photographs have been hitherto made for want of the proper lens.



ITEMS OF INTEREST.

It often happens that mounts get soiled or damaged in some way, and, the print being of value, it is desirable to remove it from its support and remount it. E. Krueger sends us the following, which serves admirably for albumen and collodion papers: "Take 2 quarts of hot water, and add, approximately, 1 ounce of liquid ammonia. Soak the prints in this. If the mount be one of the enameled variety, the print will come off in a few minutes. Plain mounts require a little longer soaking, but separation readily occurs. This soaking, also, serves to cleanse the print thoroughly." Of course, this plan cannot be adopted with gelatine papers.



At a recent meeting of the Photographic Society of Philadelphia Dr. C. L. Mitchell stated that he had accidentally discovered a means of removing pyro stains from negatives. The negative is immersed in a weak solution of bichloride of mercury, and, when slightly intensified by the usual methods, the stain disappears. If too dense, it can be reduced in the ordinary way without the return of the stain.



WE regret to have to record the death of Max Platz, the Chicago photographer. He was known as "The Sirony of the West," having an extensive celebrity business. "A diamond in the rough, he was generous to a fault, and proud of his profession."



THE photo-autocopyist is attracting some attention in England. *Photographic Work* gives the following outline of the method adopted: "A sheet of vegetable parchment, covered with a layer of gelatine, is cut to the size of the printing frame, and sensitized in a weak solution of bichromate of potash, the strength of the bath varying from 2 per cent. in summer to 3 per cent. in winter, according to the temperature. To the bath a few drops of ammonia should be previously added. The sheet is allowed to remain in the bath for three minutes, until it is

turned a bright yellow. It is then removed, squeegeed down to glass, and dried in the dark. The time of drying varies, but the demonstrators recommend the sensitizing over night, so that the film will be ready for use next morning, when it is stripped from the glass, and exposed in an ordinary frame behind the negative. Printing takes some little time, as the film is not very sensitive. The action of light renders the film hard and insoluble beneath the clear portions of the negative, and turns the film to a brown color. Hence, printing is not a difficult matter. When all detail is out, the film is reversed, so that the light may harden the back of it. It is then soaked in water for two hours. The bichromate is washed out of the portions unacted on, which swell, and give an embossed appearance to the film—the parts acted on being sunk into the gelatine. The film is then softened with a solution of water, gelatine and ammonia, which is poured off, and the film dried with a cloth. Inking takes place with ordinary lithographic ink by means of rollers, a stiff ink being used for the dark shadows, and a thin ink for the light half-tones, etc. Any color, or mixture of colors, may be used by varying the tint of the ink, which latter only adheres to the portions affected by the light. After inking, a sheet of paper is laid on the film, and inserted in an ordinary copying press. Pressure is applied in the ordinary manner, and the process repeated *ad lib.* The price of the apparatus is moderate, and it may be recommended to photographic societies for circulating copies of medaled pictures, etc.”

WE understand that *The Practical Photographer* will be permanently increased in size with the April issue, and that the price will be raised to two pence monthly. This magazine is an eminently practical one, is well illustrated, and deservedly popular.

IN his lecture on “The Photo-Mechanical Processes,” at the Drexel Institute, Philadelphia, S. R. Koehler called attention to the necessity of schools for the purpose of teaching, as well as scientifically investigating, the various photo-mechanical processes. He suggested that the Drexel Institute was admirably adapted for carrying out such a plan.

W. B. LLOYD has been engaged to make a composite picture of the House of Lords, similar to his famous photograph of the Synod, and will go to England for that purpose early in 1895.

A SALT LAKE CITY photographer uses burning celluloid as a substitute for the magnesium flash. The celluloid is cut into thin shreds and then ignited.

WRITING in *Autotype Notes* on carbon printing, A. C. Braham gives the cause and remedy for blotches, tears or blebs in carbon transparencies: “A transparency, having to be viewed by transmitted light, requires (apart from the question of using a special tissue) at least three times the printing necessary for producing a print to be viewed by reflected light. If this fact be unknown or forgotten, and the exposure has been insufficient, the transparency will quickly appear to be sufficiently developed, and will probably be withdrawn from the hot water before all the soluble gelatine and pigment have been washed away; in this case, the glass retaining sufficient heat to cause this soluble portion of the

film to run, these so-called "tears" are formed and spoil the plate. The remedies are obvious: Print deeply, and develop in hotter water for a longer time than is needful with paper prints."

To prevent the sliding of the tripod legs on smooth floors, it is usual to stick corks upon their points. A better way is to take a short piece of thick india-rubber tubing and cement in one end a thick piece of india-rubber. Above this cement a piece of cork, to receive the spike.

IN order to promote interest in the coming convention of the Photographers' Association of America, the G. Cramer Dry Plate Works have offered a handsome solid silver cup and fifty gold badges for work done on their plates. The points to be considered are posing, lighting and chemical effect, 25 marks being allotted to each of the two former and 50 marks to the latter.

THE Executive Committee of the Photographers' Association of America are doing active work, and are rousing the interest of photographers as it was never roused before, and many new faces will beam at St. Louis.

WE were accused last year of reporting a convention at which we were not present. While admitting that it is our custom to publish society reports as sent in to us by secretaries, we would say that three of our staff were at the Chicago convention, and the same trio hope to lend a hand at St. Louis.

THE P. A. of A. Secretary has issued a "Don't" circular, and some of his hints are well worth publishing. Here are a few: "Don't forget to watch the journals every month; don't forget to keep your darkroom and chemicals in good order; don't forget that clean chemical effect plays a big part in the eyes of the judges; don't forget that a head screen will help you to get good lighting effects, and don't be unwise and stay at home."

IN copying it is essential that the lens shall be in a position at right angles to the center of the picture being copied. If this is not the case, distortion will occur. By the following simple method this desired result can easily be obtained. A small mirror is fastened over the center of the picture, and, hanging by a cord, is adjusted until exactly parallel to the picture surface. The reflected image of the lens should be visible in the mirror as seen on the ground-glass. If this is not the case, the picture should be turned until the correct position is ascertained.

IN our description of the frontispiece in the February number of the BULLETIN we omitted to state that the prints were from negatives made on the Standard dry plates. These excellent plates are meeting with considerable favor and patronage.

THE following appeared in the preface to the catalogue of the London Camera Club's exhibition, and is worth more than passing notice: "Perhaps the greatest curse of photography, in the sense now under consideration, is the fatal ease with which indifferent work may be produced by its means. But for the best work, as much artistic feeling, as much technical proficiency, and as much



From negatives by JOHN ROSCH.

patience and care, are required as in any other of the graphic arts, among which, for the intrinsic beauty of its products, it certainly deserves to hold an honored place."

THE New York office of the Niagara Construction Company is kept fully posted as to the progress of the work by photographs sent on at short intervals. During the construction of the portal of the tunnel, a photograph was taken each day to show the iron work and masonry.

THE *World* of March 18th publishes a wonderful series of pictures from negatives made at Edison's workshops with the Kinetograph. We extract the following:

"The strip of gelatine upon which the photographs are taken records close to one thousand pictures, the exact number being nine hundred and forty. The strip is unrolled electrically. It stops for the one-forty-sixth of a second while the exposure is made, and then it moves on an inch, and the same performance is repeated.

"All this takes place in a special house which Mr. Edison has built for securing kinetograph photographs. This house revolves with the sun, being so placed on a track that a horizontal motion is secured to follow the orb of day, while the framework of the roof has a vertical action. A direct blaze of light from the sun is thus secured upon the object which is being photographed.

"The kinetograph and the kinetoscope are two different machines. Both are the invention of Mr. Edison. The former takes the pictures, and the latter shows them to the public. The kinetoscope is a nickel-in-the-slot machine."

A CLOUDY, milky deposit, sometimes formed when developing with water containing calcareous matter, may easily be removed by immersion in a bath containing alum and a little hydrochloric acid.

BUGUET recommends a method of retouching during printing. If the negative has dense spots, the printing of these parts may be accelerated by concentrating the light on them by means of a glass.

DR. MIETHE improves the cold tone sometimes obtained with bromide paper by previously forming chloride of silver by immersion in the following bath:

Alum.....	20 parts.
Bichromate of potash.....	10 "
Hydrochloric acid.....	20 "
Water.....	1,000 "

After a few minutes' immersion the paper is carefully washed, exposed to daylight for a short time and developed in a ferrous oxalate developer, to which a little citric acid has been added. Prints varying from red to black may thus be obtained.

A CAPITAL print on American "Aristo" paper comes to hand from H. C. Voorhees, of Meriden, Conn. The pose is graceful, and the whole work excellent.

ALL communications for the May issue, all new advertisements and any matter connected therewith must reach us not later than April 22d.

EQUINE PHOTOGRAPHY.

BY JOHN RÖSCH.

THE horse, like a child, is an "unsartin critter." The mother of the first-born expects the operator to bring out all the child's most pleasing characteristics, real or fancied, and to accentuate points known to her, but not to him. But while this latter individual may have shortened his life several years in vainly endeavoring to satisfy the whims of mothers, grandmothers and hosts of other relatives, he feels that all this is truly but child's play when he is called upon to please the owner of a fashionable stable. The horseman may or may not be a father. He cares but little for the baby's picture, but the horse, his pet, his



pride, ah! what he expects of the photographer is known only to those who have had to comply with his wishes.

In the first illustration I present what I think to be the perfect position of the horse when it is desired to get the best outline. This poise of the head always gives the best satisfaction, and may be got by some plan similar to the following:

Place a man with a wheelbarrow, or a box with a rope attached to it, or, indeed, anything that will arouse the animal's curiosity, about 20 or 25 feet away in the direction in which it is desired to draw the horse's attention. When the camera is ready, with slide drawn and shutter set, let the man run with his barrow away from the horse. The chances are that you will get the desired result, ears forward, attention alert, and horse still.

Perhaps the greatest obstacle to success is the polishing up that most grooms will insist is necessary, and which the owner himself eyes with considerable

favor. The horse is rubbed and polished, the mane and tail combed, hoofs oiled, and at least half an hour spent in making the animal shiny. These attentions are not only entirely unnecessary from a photographic point of view,



but are a nuisance, in that they make the horse nervous, fretful and irritable. The pottering round and vain attempts of the helps to improve appearance only add to the trouble and anxiety of the man at the bulb.

I generally start in with the distinct understanding that all this fussing is un-

necessary and calculated to spoil the picture. The horse is left largely to himself, and will quickly assume a natural and correct pose. The assistant then draws his attention, and the thing is done.

The horse in action does not try the nerves of the operator to any great extent. Calmness and quickness of action at the right moment are the qualities requisite. For this class of work I use a triplex and athlete shutter, the former on a Dallmeyer rapid rectilinear lens. Cramer crown and Stanley 50 are my favorite plates. The development of plates, exposed for so small a fraction of a second, is an operation requiring time and great care. I have a stock solution of carbonate of soda, hydrometer test 20, to 1 ounce of which I add 10 ounces of quite warm water, using warm water in both winter and summer. After immersing the plate in this solution for three to five minutes, I develop as usual with my standard pyro developer. Out of forty exposures made on Cramer crown plates I did not lose a single plate, every one being first-class American "Aristo" printers.



VANADIUM SALTS IN PHOTOGRAPHY.

IN *Revue Suisse de Photographie* the brothers Lumière discuss at length the photographic properties of the salts of vanadium. Though from a practical point of view there appears to be but little probability of these salts finding present application in photography, there is certainly a theoretical interest in their investigation. The hypovanadous salts are extremely active reducers, and, as they have never been isolated, they are only known in solutions. Messrs. Lumière have been able to utilize the reducing properties of these solutions in the development of the latent image, by adopting the following method: When metallic zinc is brought into contact with a sulphuric acid solution of vanadic acid, the solution first becomes blue, then green and finally violet. Thus it has in turn contained vanadic (red), hypovanadic (blue) and hypovanadous (violet) sulphates. It is when in this latter state that the solution acts as an energetic developer, working even when the solution is distinctly acid.

Independent of the possibility of using the hypovanadous compounds for the development of the latent image, the vanadic salts are interesting in that they give a photographic image by reduction on exposure to light. Vanadic acid or pentoxide of vanadium dissolves in certain acids, giving very unstable yellow or red solutions which are generally precipitated by water. Among these vanadic solutions are found the chloride, phosphate and the potassic-vanadic tartrate, which have given us the best results as regards their sensitiveness to light. They have been prepared by collecting the vanadic acid produced by the calcination of ammonium vanadate or by the action of nitric acid on this salt. To form the chloride, vanadic acid is treated with cold concentrated hydrochloric acid. The red solution is precipitated very readily by water, so that the solution should not be diluted until necessary. This precipitation may, to a certain extent, be avoided by using a mixture of water and alcohol. If a sheet of sized paper is impregnated with this liquid and dried in the dark, a reduction will occur on exposure to light. On exposing under a positive a sheet so sensitized, a slightly intense print is rapidly obtained which may be fixed by the aid of the aromatic amines in the same way as pointed out for the manganic salts.

Vanadic phosphate is obtained by heating vanadic acid with phosphoric acid to a temperature of 150 degrees. It is not so easily precipitated by water, but is less sensitive to light than the chloride.

Potassic vanadic tartrate is easily obtained by agitating pentoxide of vanadium in a solution of bitartrate of potash. With the yellow solution so obtained a paper may be prepared that is very sensitive and keeps, apparently without deterioration, for some weeks. The color reactions obtained with these different preparations are not numerous, and the images produced are weak. These imperfections are attributable to the comparatively weak oxidizing power of the vanadic salts. The high price of the vanadates precludes any practical use of these materials, but the experiments made are extremely interesting as a contribution to our knowledge of the phenomenon of the reduction of the metallic salts under the influence of light.

INSTANTANEOUS PHOTOGRAPHY.

BY CAPTAIN W. DE W. ABNEY.

UNDER moderate conditions as to weather, there is no day, at any time of year, with a rapid plate, on which an instantaneous photograph of a fairly open landscape may not be taken between the hours of nine in the morning and three in the afternoon by using a stop of $f/8$, with a shutter which can give the one-tenth of a second's exposure. On a bright day in summer the stop that can be used is often as small as $f/22$, and even $f/32$, with an exposure of one-fiftieth of a second. This means, on the old system of calculation, supposing $f/22$ be used in summer, that, with equally well-exposed negatives, the light (say in December) is forty times less photographically intense than in July, or, if $f/16$ is used, ten times less intense. This is not far from the truth. As an example, it may be stated that, with one of the most rapid plates in the market, early in December, about 11 A. M. on a cloudy day, with occasional gleams of sunshine, perfectly exposed negatives of near oak trees, with old brown foliage on them, in Richmond Park, were obtained under the circumstances described. The same trees were taken in the previous July with $f/16$, about 10 A. M., the shutter set to give one-fiftieth second, and the exposure was more than sufficient, although the shadows were very heavy. As a rule, the amateur packs up his photographic kit for instantaneous work as soon as the short days commence. This is a mistake, for effects can often be obtained at such a time, owing to the low altitude of the sun, which cannot be found on days that are long. Abroad, particularly at high altitudes, where the air is clearer and the sun brighter, views can be obtained later in the day (or earlier) than at home; for instance, with $f/8$ and one-twentieth of a second exposure, good views in fairly wide streets of Rome have this year been obtained in January up to 3.45 P. M. The writer has obtained, in the middle of February, views in the city (London) which have been fully exposed. It cannot, however, be too much insisted upon that, for such purposes, really rapid plates should be employed. It must not, however, be considered that *any* view can be taken under these circumstances. For instance, a path through a wood or a narrow street are impracticable very often under apparently favorable conditions. Let us consider the case of the narrow-street view. It is highly improbable that much sun can reach it even in sum-

mer, and much less so in the winter. The illumination is, therefore, that due to the sky. Now, though the light from the whole sky—or, say, from half the sky—may be sufficient to illuminate a wall so as to impress the photographic plate, yet if we have but a small fraction of the sky-light available, as is the case in such a street view, it is manifest that the illumination will be deficient, and no amount of “coaxing” in development will give a satisfactory picture.—*Photographic Work.*

(To be continued.)

THE P. A. OF A. CONVENTION.

A LETTER FROM SECRETARY RÖSCH.

THE links of the chain that have held the P. A. of A. together since 1880 have been getting rather rusty the last three or four years, and it would soon have been a question of “would the chain hold together much longer,” or would it break and thus cast asunder an organization that we as American citizens and as photographers of a great country should have upheld, because it was and is a national association, to which we, as picture-men of America, should have lent our support and aid. The association was organized to advance photography and to elevate the character of its followers, to establish a higher and more perfect system of conducting our business, to promote a friendly intercourse of feeling and form a unity of purpose in pursuing the directions that point to the greater success of photography as an art or as a profession, that should be dear to us and in common with all well-disposed men. Reason well with these facts and then determine whether you will aid us in upholding the association and bettering its condition and purposes for the future.

If you are not a member, join it and be recognized as one of the members of an organization that should have no equal in point of greatness, and should have among its members the greater part of the energetic photographers of our country. The cost of becoming a member is very slight; \$5 for proprietors and \$2 for employees, will entitle you to all privileges. Surely the expense is very low, and should be an encouragement to join and compete in some of the classes at St. Louis. Send me your name and I will give you full information, and prove to you that it will be profitable to be a member of the Photographers' Association.

Very respectfully,

J. ED. RÖSCH, *Secretary.*

A meeting of the St. Louis photographers, dealers and manufacturers will be called in April, at which time all arrangements will be made for the entertainment of the visiting members, and plans formulated to carry on all necessary matters thereto.

SPECIAL.

ST. LOUIS, March 22, 1894.

A letter from Mr. Clark, of the *St. Louis and Canadian Photographer*, just informs me that he has had complaints that I am asking pay for photograph exhibits. I certainly have been misunderstood. In no case have I made any mention of charges to photographers. Please rectify the error in your April number and make it very strong. I have, on the contrary, been prompt and and polite to all those who have corresponded with me.

J. ED. RÖSCH.

PRINTING DODGES.

BY GEORGE C. BAKER.

SHEET celluloid, as sold in fancy goods shops, when cut to the same size as the plates used, is a handy "dodge" in the printing-room. It is thick enough to be placed in the printing frames like a negative, and when so placed in front of the plate, it serves all the purposes of the tissue paper generally pasted on the frame, besides being handier and neater. If the rough side be placed outwards, it can be darkened by a lead pencil as desired, and this method of lightening up spots in the negative is much easier than pasting paper on the negative, or working on the glass with paint or opaque, and I think gives better results, the surface of the celluloid being so far distant from the paper that even the baldest and roughest work is softened and gives a pleasing effect. After the celluloid has served for one plate, it can be washed clean and used again. Of course, for very fine work this method would be worthless, but for broad effects it is very useful. I have even used a lumber crayon on the sheet with success. One hears often of transparent shadows, but it is often desirable to introduce "transparent lights," also, to give atmosphere, and by this method one may dodge in a ray of sunlight, for example, which will not appear like a shaft of dazzling radiance, but as a soft, mellow beam, through which objects behind it may be clearly discovered. This is due to the rough tooth, which prevents a perfectly opaque shading.

One other use has, I believe, been before suggested, but I cannot resist the temptation to mention it, and that is the use of a sheet of celluloid between the plate and the paper. It cannot be recommended except in a few cases, but it is the means of making the hardest negative soft in its outlines, and, if thick enough, will give it almost the appearance of having been taken with a "pin hole."



OUR publishers have received a unique photograph album from Mr. T. Asanuma, the leading photographic stockdealer of Japan. The general get-up of the book is distinctly Japanese, that is, perfect, even to the smallest detail. The 8 x 10 photographs, with which the book is filled, are a revelation to those not familiar with the great strides that photography has made in Japan. All are colored by Japanese artists, who are simply without rivals in this particular branch. The book gives an admirable insight into the manners and customs of the inhabitants of this interesting country, and the general views show Japan to be a veritable photographic paradise.

WE understand that a patent has been granted in Germany for a method of making non-halation plates, differing entirely from the backing or multiple-coating processes, and said to be very effective. Long before the application was made in Europe a similar application was filed in this country with the Patent Office, thus invalidating the German patent.

KEEP in mind the convention to be held from July 24th to 27th, inclusive, and remember the motto, "DON'T MISS THE ST. LOUIS CONVENTION."

LANTERN WORK.

MOUNTING LANTERN SLIDES.

BY H. S. NUTT.

WITHOUT entering into the various modes of producing slides, I would call attention to the manner of mounting them. My attention has been called particularly to this subject through happening to borrow a few to assist in an exhibition. The lower glasses were thick and in some cases so much so that I could not force them through the ordinary slide-holder, being thus unable to use them. In addition, the binding was of such inferior paper and so poorly attached to the glass that in some instances the attempt to show the slides stripped the binding over one-half its length. Of course I had to repair damages before returning them, but a comparison between them and my own was greatly in favor of the latter. I fail to find that your publishers bring their articles for this purpose strongly enough to the notice of the slide-makers. I have used for years the cover glasses you furnish, which are the very thin, colorless glass, about one-fiftieth of an inch thick, wavy and springy in all directions. When you first suggested their use, I feared for the results, owing to the appearance of the glass, but, upon trying them, have used no others. Their lightness is remarkable, and in place of the heavy, clumsy slide as before, I have a very light one, and as regards the effect of the curves and waves, they do not show in the lantern at all. I can carry sixty in a box that formerly held only forty, and I believe there is less liability of breakage.

For binding, I use the prepared binding paper your house supplies, in long rolls. It is manilla paper, tough, and coated with a heavy mucilaginous substance that holds on, no matter how you handle them. The title of the picture can be written on the margin, and if more room is necessary for the description it is easy to gum a strip across the end of the slide. I also mark an arrow on one edge, to show how it is to go into the slide-holder. This can be easily seen in the dim light coming from the lantern. I cut the paper into proper lengths, and moisten them with clear water, using a bristle brush for the purpose. As soon as it is thoroughly moist, it will lie perfectly flat on the table and is ready for use. I hear many remark that one of the drawbacks in preparing lantern slides is the work of mounting and binding, but, as I do it, a large number can be done in a short time and with very little work. The glass is cleaned by merely breathing on it, and rubbing with a bunch of tissue paper, or, better still, a piece of chamois skin or wash leather.

THE paper referred to by H. S. Nutt is that known as "Sheplie gum paper," sold in rolls $\frac{7}{16}$ of an inch wide and several hundred feet long. The glass is the thin lantern slide cover glass now used by so many prominent amateurs and sold by our publishers.

THE petroleum light can be materially increased and the flame made whiter and more suitable for projection purposes by dissolving about half an ounce of camphor in every pint of petroleum.

A POSING STUDY.

WE are glad to be able to give our readers a posing study so worthy of imitation. The first thing necessary is a tractable subject, one who, while naturally graceful, is yet willing to be guided wholly by the will of the operator. The half-tone is made from a print on American Aristotype paper, and is well worth notice, even as a specimen of photo-mechanical work. But there is a



suggestion of absolute freedom from conventionality and an entire absence of "photographic fright" that makes the picture one that will command attention as a study. Grace, ease, and comfort are the characteristics. We would also point out the general advantage of such a full-length figure over the ordinary bust picture. The negative and print were made by Strauss, of St. Louis. This photographer is now engaged on a set of American "Aristo" prints, to be used as frontispieces to the BULLETIN. We can promise our readers something out of the ordinary.

JOTTINGS FROM GERMANY.

Dr. LONSE, of Berlin, recommends the following way of marking a negative, either with a name or number :

Write name or number on a piece of paper. Any ink will do, but copying ink is preferable. Moisten the negative, or at least that part of the same where the name is to be. Half a minute is sufficient. After the gelatine has absorbed all the water, place the paper with the name on the film and press gently. After a little while take the paper off, and the name will appear reversed on the negative.

This process has the advantage that it can be used without any apparatus, and gives the actual writing of the producer, which is sometimes very desirable.

A NEW developing substance, called "Phanerogen," has been discovered by Messrs. Reverdin and de la Harpe, and is introduced into the market by a Swiss firm. Phanerogen is a white, absolutely durable crystalline powder, which dissolves easily in alkali solutions, coloring them slightly yellow. In its characteristic features it very much resembles eikonogen, and, like this substance, has no reducing power in neutral or acid solutions. It is said to be particularly suitable for instantaneous pictures and plates having short exposure. The gradual progress of development can be well followed in spite of its strong power of reduction. The actual composition of the substance is not known.

Dr. A. MIETHE has obtained good results with platinum toning on matt collodion paper, producing very deep black pictures, with brilliant whites, by adopting the following treatment : The deeply printed paper is put through three washings, and then into a weak salt-bath (which bath Miethe recommends for all collodion papers, when separate baths are used), and finally in fresh water, after which it is placed in the following platinum bath :

Nitric acid	5 c.c.
Chloro-platinite of potassium.....	2 grams.
Water.....	1,000 c.c.

The toning process proceeds quickly, and the picture is taken out when it has a velvet-black appearance with a bluish touch in its transparency. The fixing is done in the ordinary way. By means of the nitric acid test it can be proven that almost all the silver has been replaced by platinum, so that with regard to durability the pictures are equal to the genuine platinum prints. If 10 grains of citric acid are taken in place of the nitric acid of above bath, very fine and warm brown tones are obtained, but the bath acts more slowly, and the substitution of the metals is not so complete. The resulting prints are excellent. The depth of tone, as well as purity of the whites, is equal in value to the best platinum papers, and the fine matt surface gives a very handsome effect.

Professor H. W. VOGEL writes that complaint is frequently made about the appearance of yellow spots on mounted photographs, and many believe it is due to the action of anti-chlor (hypo) used in the manufacture of the card mounts. He made a 1 per cent. chloride of lime solution and immersed a piece of cardboard for half an hour. It was then dried, and an albumen print

was mounted on the same with starch paste. This picture has remained unchanged for half a year, showing that chloride of lime in such a diluted condition has no injurious action on the picture.

Many photographers use blotting paper in mounting photographs. The moisture of the mounts is soaked up by the paper, and if the print was not sufficiently washed, hypo may collect. This will gradually accumulate in sufficient quantity to injure the print and cause yellow spots when the blotting paper is not replaced from time to time by a fresh supply.

If the print turns yellow, the reason is mostly in the photographic picture. If the print has been washed badly, the picture will turn yellow generally; if badly fixed, local yellow spots will appear. Very fine small spots indicate mostly the presence of a sulphurous dust, or are caused by fixing soda in the blotting paper.

He says further: The use of bronzes containing sulphur and color matter impregnated with sulphur (for the production of black card mounts) is decidedly a cause of yellow spots, and this is most rapidly accelerated by the use of acid paste (5 per cent. of glacial acetic acid to 100 ccm. of fresh paste).

We may divide the appearance of this yellowing into three classes: A complete yellowing of the mounted photograph, numerous yellow or whitish spots upon the picture after more or less time, or the formation of large yellow spots of irregular dimensions.

The third case is mostly visible on pictures mounted with an acid paste on black mounts.

Although due to a great extent to above causes, Dr. Vogel says that the fault is just as often on the side of the producers of the picture.

He cites one case, where a party fixed in a small 5 x 8 tray about five hundred pictures. For want of sufficient hypo-soda, not the soluble, but the insoluble double salt was formed. This, being insoluble, remained, of course, in the pictures, and all washing was of no avail. This salt decomposes with formation of sulphide of silver and causes the yellowing of the picture.

If the picture was thoroughly fixed, but not sufficiently washed, a little of the soluble double salt will remain, which is also gradually decomposed, with formation of sulphide of silver. In such cases the yellowing is mostly a general and uniform one.

To avoid these troubles, he recommends iodine starch paste, with a minimum quantity (1 per 1,000) of iodine, which is by no means a dangerous preparation.

EXPERIMENTS made by E. Valenta with thiosinamine to test the reducing action of a mixture of thiosinamine solution and uranium nitrate show that such mixtures have but feeble action. But prints upon chloride of silver paper, when treated with such mixtures, will assume a pronounced red tone, which subsequent treatment in a combined toning and fixing bath readily changes to a deep sepia. The solution is made up as follows:

Thiosinamine.....	80 grains
Uranium nitrate solution (1:10)	2 drams
Water.....	17 ounces

THE illustrations in the March number of *Photographische Correspondenz*

are very fine. Of more than usual interest is a photo-chromotype in three colors made by Husnik and depicting a parrot and bowl of fruit.

Herr C. M. GRUBY (in *Amateur Photographe*) ascribes the lack of permanency so much complained of in prints toned in the combined toning and fixing bath not so much to chemical decomposition as to defective paper.

He says: " 'Aristo,' as well as some gelatino-chloride papers which I toned in different toning and fixing baths, preserved to the present day their freshness of color, while papers of certain other manufacturers faded, even those finished in separate toning and fixing baths." He has found Valenta's bath, although the most simple, to work excellently, giving all gradations to violet-black. The formula is as follows:

Hyposulphite of soda.....	20 grams.
Nitrate of lead.....	1 gram.
Chloride of gold solution (1 : 100).....	5 cc.
Water.....	100 "

to which mixture he adds from 2 to 3 grams of crystallized boric acid. This bath keeps for a long time. A few grams of acetate of soda (1 or 2) may also be added. He further says: The radical change, however, which I made and recommend, and which insures perfect fixing besides avoiding the formation of spots, is the use of a fixing-bath of a weak solution of 15 grams hyposulphite of soda in 200 c. c. of water previous to toning. In this bath the prints are left for a few minutes until they assume a brownish yellow coloration. They are then washed and put in the above toning and fixing bath.

The fixing solution, of course, has to be made fresh every time. No superfluous chloride of silver will enter the toning bath any more. This becomes thereby more durable, the toning is more uniform and the tones are actually more constant, because the picture is completely fixed.

Among the German patents lately granted is the following: Grained paper to use for all technical purposes, particularly for lichtdruck and platinum prints, as well as for lithography, photo-lithography, etc., by Karl Schäuflén, Heilbronn.

This grained paper has a perfectly regular sunken-in (depressed) grain of the shape of a blunt cone or conical section, whose base may be of different forms. Deviating from the former pyramid-grained paper, which shows a raised grain, the above-mentioned paper has received a sunken grain. This grain is produced in the most simple way by means of a strong calender, whose one roller has elevations corresponding with the depressions the paper is to have, while the other roll has a paper protector.

This negative pyramid-grained paper serves for all processes which require a transfer plate, and is treated with chrome salts, gelatine, etc., in the same way as the present pyramid-grained papers are prepared.

To strip gelatine films from the glass without enlarging their dimensions, and without recourse to the poisonous hydrofluoric acid, Mr. L. Borlinetto recommends the following method.

First coat the dry negative with 15 per cent. collodion. After this has coagulated, put the negative into a dish containing bichloride of mercury solution, to

which a few cubic centimeters of alcohol have been added. The dish is rocked to obtain a uniform penetration of the liquid, and the plate is then carefully washed and put into a dish of pure water. The film can now be loosened on one corner and then stripped. It will be found that it has not stretched in the least.

If the stripped film is put into a solution of hypo, it will assume again its original color. Finally the film has to be washed thoroughly and dried upon a level surface.

THE peculiar phenomenon of the darkening of collodion negatives after being coated with gelatine has never been properly explained yet. Mr. Max Jaffé, who has made investigations in that direction, recommends the following: Prepare a solution of 50 grams of gelatine in 500 c.c. of glacial acetic acid. With this solution, which remains constantly liquid, the negative is flowed (without previous heating). The superfluous gelatine is poured back into the bottle, and the plate is placed in a vertical position to dry. When the negative is completely dry, the thick stripping gelatine solution, which now does not require an addition of glacial acetic acid, is put on the negative. It would be interesting to know the actual cause of this appearance.

WE notice the following in *Photographische Chronik*: "If it be true that good illustrations are the greatest factor in the education of the people, the United States must rank first among the nations of the world, in which education is considered as the basis of the welfare of the community. The number of illustrated papers there is much greater than in any other country, and photography, particularly the photo-mechanical processes, may claim the giant share of the credit."

E. VALENTA and A. Albert have been appointed instructors at the Imperial Institute of Photography at Vienna. Valenta has charge of the photo-chemical department, while Albert assumes control of the photo-mechanical instruction.

THE REDUCTION OF OVER-PRINTED ARISTOTYPES.

BY E. VALENTA.

THE solutions used for the reduction of dense negatives are usually either a solution of hyposulphite of soda and red prussiate of potash, or Haddon's reducer, a mixture of sulphocyanide of ammonium and red prussiate of potash. These are not well adapted to use on chloride of silver prints, the former acting too rapidly, even when very dilute solutions are used, and thus obliterating the fine details, and the latter because of the presence of the sulphocyanide salt. I have found that solutions of hyposulphite of soda, to which nitrate of uranium has been added, act slowly and uniformly as reducers, and are particularly well adapted for the reduction of over-printed aristotypes. A cold saturated solution of hypo is diluted with 4 parts of water. To every 100 parts of this liquid 1 part of a 10 per cent. solution of nitrate of uranium is added. The print to be reduced is placed in this solution, and reduction is accomplished in a few minutes. The print is now washed and toned in a combined bath. I use the

simple combination bath recommended by me, and all prints treated in this way have turned out very well. The finer details are only injured when the reduction is allowed to proceed too far. The whites appear brilliantly, and the toning proceeds uniformly. Thiocarbamide, which has been recommended for the removal of green fog from negatives, gives, when mixed with nitrate of uranium in aqueous solution, a yellow liquid which also has a reducing effect on chloride of silver prints.—*Photographische Correspondenz*.

THE PRODUCTION OF GELATINE DRY PLATES FOR PHOTOGRAPHY IN NATURAL COLORS.

BY E. VALENTA.*

THE ordinary bromide of silver gelatine dry plates, as in general use at present, are very sensitive, but show such a coarse grain that they correspond by no means with the fundamental condition of Lippmann's process, "continuity of the film." It is a well-known fact that the sensitiveness of gelatino-bromide of silver emulsions increases with the enlargement of the grain, and that this growing of the grain in raw emulsions can be produced by addition of ammonia or by heat (ripening of the bromide of silver).

If we have therefore an emulsion which possesses almost no grain, care must be taken to avoid in the preparation everything that could promote a ripening of the bromide of silver and a corresponding enlargement of the grain.

Such "grainless" emulsions are obtained, if at the lowest possible temperature (30 to 35 degrees) the required quantity of nitrate of silver, on the one hand, and on the other, the bromide with gelatine, are dissolved in water and the nitrate of silver solution is poured into the bromide solution. This will cause no strong discoloration of the mixture, but a weakly opalescent liquid is obtained, which has to be worked up as quickly as possible, to avoid an enlargement of the grain.

The following bromide of silver gelatine emulsion, the result of numerous troublesome experiments, is produced in that way.

Make two solutions :

A.

Gelatine.....	10 grams.
Nitrate of silver	6 "
Water	300 "

B.

Gelatine	20 grams.
Bromide of potassium.....	5 "
Water	300 "

These solutions are cooled off to about 35 degrees Cent., and then Solution A, under stirring, is poured slowly into Solution B (in the darkroom), whereby an almost transparent, only faintly opalescent liquid will result.

This emulsion (if the liquid may be called by that name) has to be worked quickly, to avoid ripening,

It is poured immediately after mixing into about 1 liter of 90 per cent. alcohol, and is stirred with a glass rod until the whole precipitated gelatino-bromide

of silver adheres to the same. The precipitated emulsion is then cut into small pieces, and is washed for a short time in clear running water. The washed emulsion is put into a beaker glass with so much water that the original volume (600 c. c.) is obtained again, is then cooked at as low a temperature as possible, and at once applied, after filtering and addition of coloring matter.

If the cooking of the emulsion is desired to be avoided, the following means, recommended by Lumière, may be resorted to. The emulsion is not precipitated, but the plates are flowed at once after mixing and filtering (eventually sensitizing). For this purpose, the plates are put upon a level marble slab until the film has become solid, and are washed thereafter in running water for about fifteen minutes, which time is fully sufficient to remove the soluble salts from the film.

The emulsion must be filtered before flowing, which is done best through hemp or glass-wool in a funnel.

Care must be taken when flowing the plates that the film will not go beyond a certain thickness. I have obtained the best results when working with thin films. For the flowing of the plates, a small apparatus can be used to advantage where the plate is put upon a rotating disc after flowing, whereby the excess of emulsion is removed by centrifugal force.

In the preparation of the plates, it is further necessary to observe that the flowed and solidified plates are treated with diluted alcohol before washing, as otherwise numerous small air bubbles will adhere to the plates, giving the film after washing the appearance of being covered with small pinholes. To avoid this, the plates, after the film has solidified, are put in diluted alcohol and the liquid is kept moving until the several air bubbles have disappeared. After this, the plates are rinsed under the faucet, washed in running water for twelve to fifteen minutes, and dried. The dry plates are transparent, and show almost no preparation. A slight opalescence of the film is only observable when the plates are looked through in their transparency.

If such a plate is exposed to the action of ammonia vapors, the bromide of silver grain is at once enlarged, the sensitive coating becomes white and almost opaque, but is then useless for color work.

The sensitive coating of these plates has generally only a very moderate sensitiveness as compared with ordinary bromide of silver gelatine plates. It is largest between the Fraunhofer lines *G* and *F*, that is, for the blue rays, while towards the less refractive end of the spectrum it declines rapidly. To make these plates, which are quite insensitive for yellow and red rays, sensitive to these rays, certain color matter solutions are used, which are either added to the emulsion before flowing the plates, or in which the plates are bathed before use. Color matters, which act in this direction, are cyanine, chinolin red, erythrosine, eosine, and eosine silver. I apply, for instance, to make my plates sensitive to the orange red rays (to Fraunhofer line *C*), an alcoholic cyanine solution (1 : 500); 1 to 2 c. c. are added to each 100 c. c. of the emulsion, and the plates are then flowed, or the uncolored dry plates are bathed for two minutes in a bath consisting of 1 to 5 per cent. of above solution in 100 c. c. of water, which is filtered before use, and are then left to dry.

The cyanine imparts to the bromide of silver plates a maximum of sensitiveness between the Fraunhofer lines *C* and *D* to *E*, while the erythrosine gives a maximum between *D* and *E*. It appears therefore to be of advantage to apply

mixtures of these two coloring matters for sensitizing of the emulsion, and the correct action depends, not only upon the quantity of this coloring matter, but also upon the proportions in which they are mixed. According to numerous tests made by me, the following proportions are the best :

To each 100 c.c. of emulsion add 1 to 2 c.c. of a mixture of—

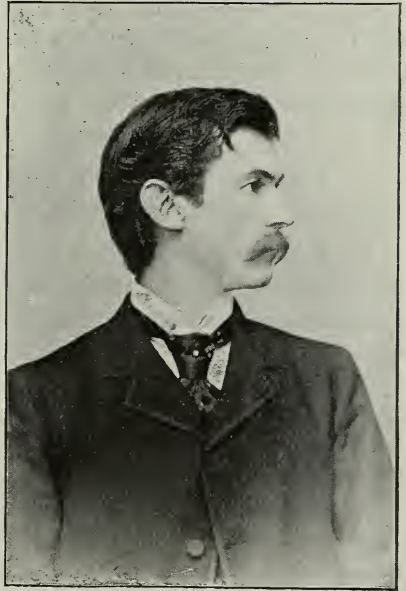
Cyanine solution (1 : 500).....	4 c.c.
Erythrosine solution (1 : 500).....	2 “

Of advantage in many cases is the application of Vogel's azaline, which, in a similar proportion as the cyanine solution, is to be added to the emulsion. The silver salt of the eosine is particularly applicable for bathed plates, and I have obtained very good results with this sensitizer.

OUR ILLUSTRATION.

CHILD LIFE, BY JOHN RÖSCH.

OUR frontispiece is an excellent study of child life by John Röscher, of White Plains, N. Y. The Röscher family is well known throughout the United States. They are a photographic family. John Röscher is the eldest of ten children, and was born in 1856. Three brothers render good service to photography in the City of St. Louis, one, J. Ed. Röscher, being Secretary of the Photographers' Association of America. John Röscher has been at the old stand in White Plains for nineteen years, and last year was appointed by the City of New York official photographer of the property condemned by the Water Commissioners. John Röscher is a true lover of Nature, and loves to while away his spare hours landing bass. Being no mean artist, his fellow fishermen insist on his making a finished sketch of any extra fine fish. Among the principal attractions in his studio are a fine mineralogical collection and a lot of Indian relics found in the neighborhood of White Plains. Not the least interesting is a series of photographs showing the progress made by the old revolutionary town.



As an out-door photographer, Mr. Röscher has few equals. His article on "Equine Photography," in another part of the BULLETIN, will be read with interest. The illustrations accompanying it show him to be an adept at instantaneous work.

SUBSCRIBERS desiring back numbers of the BULLETIN to complete the set for binding may obtain them from our publishers, with the exception of the issue of October 14th. This contained the 5 x 7 "Aristo" print of part of the World's Fair, and the whole edition was sold in a few days.

INTENSIFICATION BY HEAT.

BY R. ED. LIESEGANG.

IF a finished but still wet negative is heated over a stove, the gelatine will melt. But after having once thoroughly dried and been again moistened, a plate, developed with pyro, can be heated without the gelatine exhibiting any tendency to run.

A negative heated in this manner will show up twice as strongly as before. The light parts become almost glass clear, and the dark parts are intensified. At the same time a very strong relief is obtained, which remains after drying.

This mechanical method of intensification is interesting from a theoretical point of view. How can the picture become more intense without the addition of any new coloring matter. The fact that the picture shows a considerably stronger grain after heating justifies the supposition that several silver molecules have united to form larger ones. It is of course supposed that the smaller number of complex molecules absorb more light than the greater number of smaller molecules. This, however, is not in absolute contradiction to optical experience.

Such an emulsion of metallic silver can, therefore, ripen similar to a bromide of silver emulsion. Bain has already mentioned, in 1890, that a negative dried rapidly by heat is much denser than one dried at the ordinary temperature. We have also called attention to Sutton's process; the strong relief that occurs is made use of.—*Photo. Archiv.*



THE SEVENTH ANNUAL EXHIBITION OF PHOTOGRAPHS.

FROM the 16th to the evening of April 28th there will be held at the galleries of the American Fine Art Societies, in 57th street, under the auspices of the Society of Amateur Photographers of New York, the seventh annual exhibition of photographs.

The display will be a noteworthy one, and the most extensive, perhaps, ever held in this country. It will comprise the productions of the Society of Amateur Photographers of New York, the Boston Camera Club, the Photographic Society of Philadelphia, and other American and foreign photographers.

The Committee of Arrangements have adopted an innovation in the shape of a print committee, who will pass upon all exhibits submitted, and their judgment decides whether the exhibit sent shall be accepted and hung or not. Among the New York amateurs who will exhibit are: Rudolph Eickemeyer, Jr., W. B. Post, John V. Black, Professor George R. Cromwell, William Geo. Oppenheim, William A. Fraser, Fred. Vilmar, Dr. J. Arthur Booth, William D. Murphy, Nelson G. Palmer, Charles Wager Hull, W. J. Cassard, Lindsay C. Ivory, John H. Tarbell, A. Schweizer, J. Wells Champney, E. S. Bennett, Paul Sala, A. P. Schoen, A. L. Simpson, Dr. Edward Leaming, Charles I. Berg, Henry W. Belknap, Clinton Ogilvie, Cornelius Van Brunt, L. B. Schram, F. R. Hitchcock.

Among the lady exhibitors are noted, Mrs. E. J. Farnsworth, of Albany; Miss Edith Elliot, of New Bedford; Miss Sarah J. Hayes, of Boston; Miss Sarah J. Eddy, of Providence; Miss Annie M. Tweed, of Colorado Springs.

From New York are Miss Mary E. Martin, Miss E. V. Clarkson, Miss Elsie Mitchell, Miss Madeline Smith, Mrs. James Osborne Wright, Mrs. A. F. Arnold and Miss E. Almy Slade.

Moreno, Davis and Sanford and other professional photographers will contribute. Exhibitors from England, France, Germany, Austria, Holland, Russia, India, Spain, Switzerland, Australia and Canada will be represented, and denote an interest heretofore unknown among foreign photographers.

The following comprise a few of the well-known foreign exhibitors :

England.—H. P. Robinson, Robert Frost, Bernard Lintott, Wils A. Cadby, R. S. Webster, Frederick Hollyer, H. W. Hughes, T. M. Brownrigg, Hall Edwards, Richard Keene, James Gale, Thomas Mansell, J. V. Holcombe.

Germany.—Linet Bohmer, Hugo Erfurth, Adolph Meyer.

Austria.—Baron Julius Waldberg, Charles Scolik.

Switzerland.—R. Phillipi, C. Egger, Chr. Meisser.

Holland.—W. and C. Jerezon Frères.

Russia.—T. O. Tarasoff.

India.—Herzog & Higgins.

Italy.—M. Watson.

New Zealand.—Robert B. Walrond.

Spain.—Antonio Amatller, Enrique Alexander.

Geneva.—Frederick Boissonnas.

Toronto.—W. Braybrooke.

Philadelphia.—Clarence B. Moore, Alfred Clements, Joseph H. Burroughs, John Struthers, John G. Bullock, Robert S. Redfield, C. R. Pancoast, Dr. Charles L. Mitchell, G. A. North.

Boston.—W. F. Whiton, O. A. Eames, George H. Chickering, H. A. Latimer, Walter Chase, George M. Morgan, James L. Little, Miss Emma J. Fritz, and Henry R. Peabody.

Harford.—R. A. Wadsworth and H. O. Warner.

The officers of the Society of Amateur Photographers of New York, under whose auspices the exhibition will be held, are : President, R. A. B. Dayton ; Vice-President, L. B. Schram ; Recording Secretary, T. J. Burton ; Corresponding Secretary, R. L. Bracklow ; Treasurer, C. C. Roumage. The exhibition will be open day and evening, Sundays included.

On Monday, Wednesday and Saturday evenings, at 9.30 o'clock, special display of lantern slides will be made, and will comprise some of the best work of American and foreign slide makers.

The committee in charge of the arrangements consists of Messrs. T. J. Burton, R. A. B. Dayton, and R. L. Bracklow.

A very fine catalogue, illustrated with photogravures from the negatives of J. Wells Champney, Miss E. V. Clarkson, and Rudolph Eickemeyer, Jr., will be issued.

Silver medals will be awarded by a board of judges for the most meritorious work exhibited, and the committee have been most fortunate in securing for this important and difficult duty the services of the following gentlemen : Messrs. Howard Russell Butler, Henry A. Ferguson, Frank La Manna, and William B. Faxon.

T. J. BURTON,
Secretary.

SOCIETIES.

PHOTOGRAPHERS' ASSOCIATION OF NEBRASKA.—The next meeting will be held in February, 1895, at Lincoln, Nebraska. The following officers were elected : President, J. Leschinsky, of Grand Island ; Vice-President, T. W. Tollman, of Nebraska City ; Second Vice-President, J. V. Sturdevant ; Secretary, W. P. Fritz, of Fremont ; Treasurer, A. Smith, of Crete. Committees were appointed to attend the National Convention at St. Louis and to confer with the Iowa photographers concerning the joint trip to St. Louis.

IRVINGTON ART AND CAMERA CLUB.—The following are the new officials : President, E. D. Harrison ; Vice-President, F. H. Morrell ; Secretary, Melton Tompkins ; Financial Secretary, Isaac J. Casey ; Treasurer, James C. Peckwell.

BROOKLYN ACADEMY OF PHOTOGRAPHY.—At the annual meeting the following officers were elected for the ensuing year : President, John Merritt, M.D. ; Vice-Presidents, F. Dana Reed and Starks W. Lewis ; Treasurer, W. T. Winthringham ; Secretaries, H. S. Fowler and August A. Goubert ; Curator and Librarian, William Arnold ; Trustees, Frank La Manna, A. S. Barney, A. R. Pardington, Samuel Barron and H. B. Fullerton.

AKRON CAMERA CLUB.—The topic for the meeting of April 10th will be "The Hand Camera." Special assignments as follows : The lens, Mr. Canfield ; the shutter, Mr. Dean ; the finder, Mr. Houghton ; rising front and swing back, Mr. Adams ; roll holder and films, or plates, Mr. Gibbs ; combined hand and tripod camera, Mr. Williams ; separate view and hand cameras, Professor Shipman ; lantern slides, Mr. Terrass. A flashlight group will be made in the gallery. Members will please bring cameras.

CALIFORNIA CAMERA CLUB.—This Club is making several improvements in its rooms, which are of general interest to amateur photographers. It is establishing an electric-light plant, which will enable members of the Club to make bromide enlargements and lantern slides at night. This new arrangement will be of the greatest possible convenience. The rooms of the Club are now equipped as well as any in the United States.

OMAHA CAMERA CLUB.—A new organization, started February 13th. President, Dr. C. W. Hayes ; First Vice-President, George Patterson ; Second Vice-President, M. A. Hall ; Treasurer, T. H. Johnson ; Secretary, W. F. Durnall.

RAHWAY CAMERA CLUB (Reorganized).—President, William Chamberlain, Jr. ; Vice-President, W. P. Easterbrook ; Secretary, B. C. Mead.

ST. PAUL CAMERA CLUB.—The following officers were elected for the ensuing year : President, James Paris ; Vice-President, D. F. Brown ; Secretary, W. J. Sonnen ; Treasurer, W. B. Thorne ; Directors, W. A. Russell, E. F. Zimmerman, C. H. Buckley, Lorn Campbell, J. C. Jensen, A. M. P. Cowley.

THE DARTMOUTH CAMERA CLUB has hired a studio and elected these officers : E. O. Grover, '94, Ossipee, President ; H. P. Hopkins, '96, Milbury, Mass., Secretary ; Tallmadge Hamilton, '96, Milwaukee, Assistant Secretary ; B. W. Couch, '96, Concord, Treasurer.

LOWELL CAMERA CLUB.—At the annual meeting held March 20th, the following officers were elected; President, Paul Butler; Vice-Presidents, W. P. Atwood, W. E. Badger; Treasurer, M. A. Taylor; Secretary, George A. Nelson; Directors, F. T. Walsh, Charles Runels, John I. Coggeshall.

PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE.

THE large audience which attended the meeting held on March 5th enjoyed a literary and artistic treat. After a few minutes spent in the transaction of routine Section business, the president introduced Mr. William M. Murray, the well-known lantern-slide critic of the Society of Amateur Photographers of New York, who delivered a very interesting and instructive address upon the technical and artistic requirements in lantern-slide making.

Mr. Murray's requirements began with the production of a good negative—a negative possessing harmony of composition.

Carpeted blacksmiths' shops, fur-clad figures in rose gardens, and heavy clouds for a sunlit landscape, would not be satisfactory to a photographer with artistic feeling.

He pointed out why the pre-Raphaelite and impressionist schools had been taken up by painters for the correction of errors which had slowly crept into various art circles, and instanced the recent diffusion-of-focus fad, by English photographers, known as the fuzzytype school. A good lantern slide should possess distinctness in all its parts; the details of distant objects need not be so minutely shown as those in the near foreground, but they should not be obscured or covered up in chemical fog bearing the false title of atmosphere.

Harmony, distinctness and proper tone with other art properties were indispensable qualifications of all good lantern slides. Mr. Murray illustrated his address and gave force to his arguments by the exhibition of one hundred most beautiful slides, made by noted amateurs, American and foreign. Among the collection were many which had been furnished through the courtesy of the American Lantern Slide Interchange.

The slide exhibit began with samples of work done in a new lantern-slide camera arranged by Mr. Charles Simpson. The peculiarity of this camera consists of a device by which the negative is swung out of a right angle to the plane of the objective; in other words, it is a swing frame for holding the negative in front of the lens. With this arrangement, and the ordinary swing back and a short focus lens, the converging lines in architectural negatives are perfectly corrected in making the slide. Slides made with and without using this device were shown.

In moving a vote of thanks to Mr. Murray, Dr. T. S. Lambert said: "If I live until the tenth of May next I shall have completed my three-fourths of a century, and within those many years I have probably attended several thousands of lectures and art exhibitions; I can truly say that I never attended one so satisfactory and complete in all its parts, subject and method, as the one we have enjoyed to-night."

Mr. Murray was tendered a unanimous and hearty vote of thanks.

During the discussion which followed upon apparatus and work, the secretary exhibited for Mr. A. Lawrence, of Lowell, Mass., a simple and ingenious device for the attachment of an ordinary opera-glass to the front board of a view camera for securing large images of distant objects.

The Section then adjourned to the first Tuesday in April.

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right case appeared in the Chicago *Journal* of March 9th.

N. B.—We cannot undertake to answer questions of a technical character except through the columns of the BULLETIN. Correspondents will please remember this. No attention will be paid to anonymous communications.

O. P. M.—We do not know of any special arrangement for carrying camera and outfit on bicycle. Would suggest your applying to some satchel maker and looking over his stock, or, better, getting a case made to suit your requirements.

H. W. H.—Many thanks for the photograph. It will appear in the May issue.

C. E. B.—A lucid account of the copy-

L. R.—The grease may be destroyed by heating the bronze powder to about the melting point of zinc.

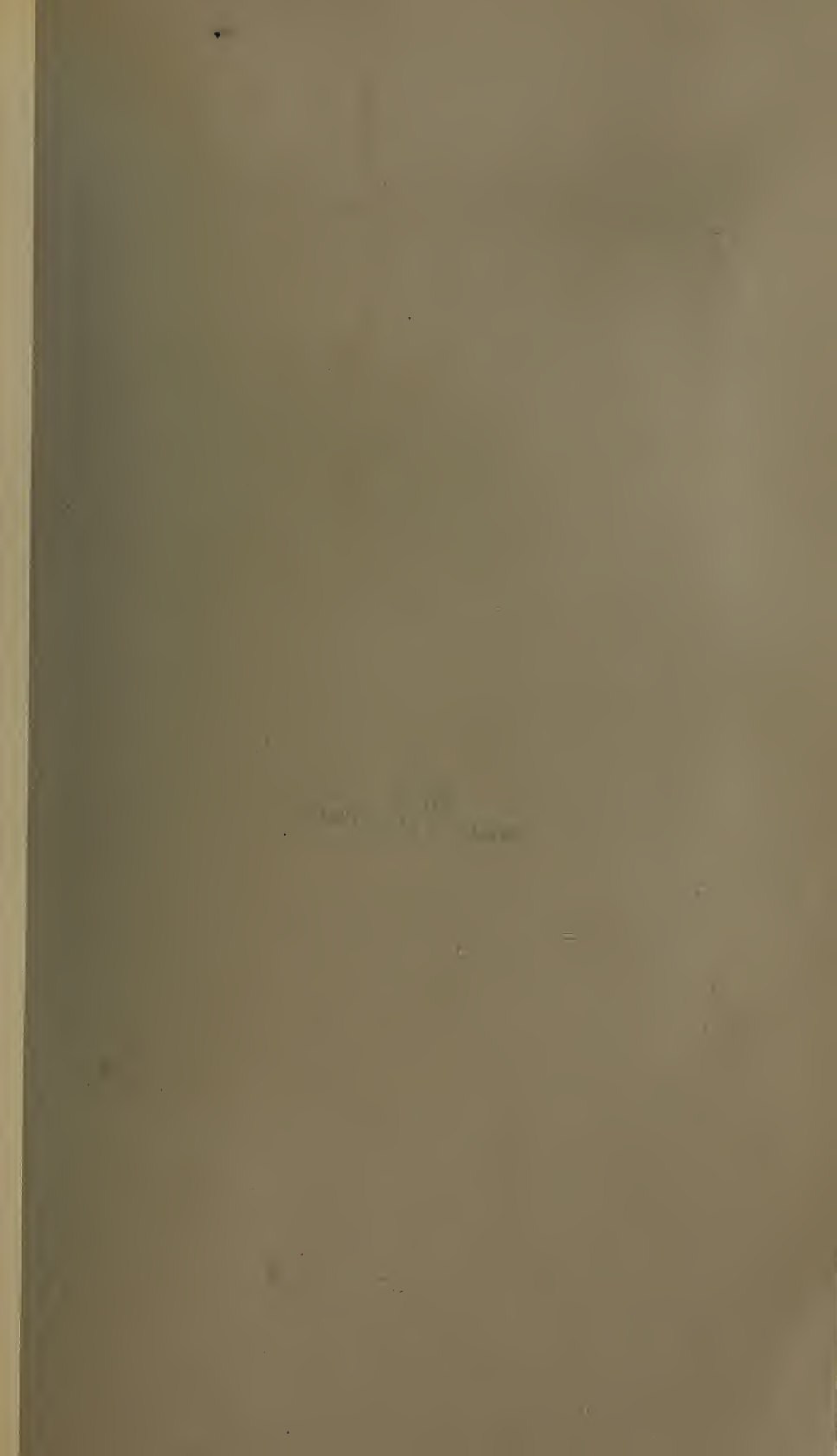
O. H. H.—Photo received. Many thanks.

E. S. C.—We cannot find the formula you allude to.

T. J. A.—Defect is not in the roller, but in the paste used. Use a blotter between roller and print and rub down hard.

C. E. J.—Overprint and tone with a weak gold bath neutralized with carbonate of soda. We have not heard of the after-toning with uranium nitrate, but will try it and report.

	PAGE		PAGE
A POSING STUDY	128	QUERY COLUMN.....	140
EQUINE PHOTOGRAPHY, <i>by John Rdsch.</i>	121	SOCIETIES	138
INSTANTANEOUS PHOTOGRAPHY, <i>by Capt.</i> <i>W. de W. Abney</i>	124	TELE-PHOTOGRAPHIC LENSES.....	113
IN THE PRINTING-ROOM.....	111	THE P. A. OF A. CONVENTION.....	125
INTENSIFICATION BY HEAT, <i>by R. Ed.</i> <i>Liesegang</i>	136	THE PRODUCTION OF GELATINE DRY PLATES FOR PHOTOGRAPHY IN NATURAL COLORS, <i>by E. Valenta</i> ...	133
ITEMS OF INTEREST.	116	THE REDUCTION OF OVER-PRINTED ARISTOTYPES, <i>by E. Valenta</i>	132
JOTTINGS FROM GERMANY.....	129	THE SEVENTH ANNUAL EXHIBITION OF PHOTOGRAPHS	136
LANTERN WORK	127	THE USE OF EOSIN IN ORTHOCHROMATIC PHOTOGRAPHY, <i>by Col. J. Waterhouse</i>	112
MOUNTING LANTERN SLIDES, <i>by H. S.</i> <i>Nutt</i>	127	VANADIUM SALTS IN PHOTOGRAPHY....	123
OUR ILLUSTRATION.....	135	VIGNETTING	109
PHOTO SECTION OF AMERICAN INSTI- TUTE.....	139		
PRINTING DODGES, <i>by Geo. C. Baker</i> ...	126		





PRINTS ON
AMERICAN "ARISTO" PAPER.

NEGATIVE AND PRINT
BY F. A. PLACE.

JUVENILE GAMBLERS.

MADE WITH

WILLIAMS' FLASH LIGHT APPARATUS.

ANTHONY'S Photographic Bulletin.

EDITORS :

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

FREDERICK J. HARRISON.

VOL. XXV.

MAY 1, 1894.

No. 5.

ACTINOMETERS FOR CARBON PRINTING.

For the proper exposure of the sensitized carbon tissue it is necessary to have some guide, as there is no visible image whatever produced by the action of the light. The roughest kind of actinometer or guide is a piece of sensitized paper. The sensitive tissue being placed in the printing frame and exposed, a piece of sensitized albumen paper is laid alongside the frame. When considerably darkened it is placed in a book and a fresh piece exposed. After the lapse of sufficient time to darken this piece, the tissue is developed. If the print comes out correctly, a duplicate print may be made by exposing until two other pieces of sensitized albumen paper exposed consecutively are darkened to the same extent as the pieces first used. This, however, is not a convenient or very accurate method of working. One of the first actinometers to be used was that of J. R. Johnson, and known as Johnson's actinometer. A small metal box contains a roll of sensitive paper. The top of the box is hinged and carries a yellowish piece of glass. On the glass a standard tint is painted, leaving a central clear piece of glass under which the sensitized albumen paper moves. The instrument being exposed alongside the carbon tissue, the paper is allowed to darken until it is of the same color as the standard tint, when one tint is recorded and the paper pulled on for another one. In this way negatives may be marked as requiring two, three or more tints, and the correct exposure, being once ascertained, can always be duplicated.

A much more convenient instrument is the actinometer for which W. K. Burton is responsible. In the Johnson instrument it is necessary to allow the paper to darken until the standard tint is reached. Now, different samples of sensitized paper may vary somewhat in color, and under all circumstances it is not easy to say exactly when the standard tint has been reached. Of this Burton actinometer, H. J. Burton, in *Autotype Notes*, writes as follows :

“The Burton actinometer was introduced to obviate the necessity of matching tints by substituting all the gradations of a negative, and the distinct improve-

ment of this instrument consists in the employment of a strip of glass bearing six small negatives, produced on Indian ink to insure permanency, and representing six different densities. In practice it is only necessary to compare the negatives to be printed with these six standard negatives, and selecting that one of the six most like it for density, expose both in the usual way, and when the actinometer negative yields upon the sensitive silver paper a properly exposed print, the trial negative may be confidently expected to have done its work on the carbon tissue. Having made a satisfactory print from one negative, this in turn may become a standard with which to compare other negatives."

Personally we greatly prefer that form of actinometer which is regularly graded from clear glass to nearly opacity, each stage being designated by a number. A 4 x 5 positive is made from a series of printed numbers running from one to, say, twelve. Upon this are laid sheets of tissue paper, there being one piece over the one, two sheets of paper over the two, three over the three, and so on. Over all is laid a piece of clear glass, and the two pieces are firmly bound together with Sheplie gum paper. The negative from which the carbon print is desired is compared with this actinometer, and the number of the section which most nearly corresponds in density to the negative is noted. The actinometer is placed in a printing frame and a piece of sensitized silver paper placed behind it. Actinometer and negative are exposed simultaneously until the silver paper under the section noted is of the proper color. The carbon tissue is then removed and developed. If the exposure is found to be correct, that particular negative is marked with the number noted, and thus a means of exactly duplicating the exposure is at hand. This actinometer is largely in use in this country and may be obtained, we believe, for \$1. It will also be found useful for comparing the rapidities of plates and papers.

THE HAND CAMERA.

IN what might be called the tripod days a photographer was an object of considerable interest and often commanded no little respect because of his attainment. But almost every family has its photographer nowadays, and the instrument most common is the hand camera. The hand camera has certainly exercised a remarkable influence on photography. Every year sees additions to the ranks, lured thereto, doubtless, by the apparent simplicity of the picture-taking process. Of these accessions some become more or less dissatisfied by reason of the many obstacles encountered, while many stay, and ultimately become intelligent workers. The former have expected much and obtained little. By them, as a class, thousands of plates are wasted, rolls on rolls of film are spoiled, until the cameras finally find a resting-place in the store-room or the cellar. It would seem that some individuals will never become photographers until a camera is invented that will guide itself to the proper position before a suitable subject, expose itself correctly, and, after carrying itself home, develop, fix and print, finally presenting its owner with a batch of finished pictures. Yet enough matter has been published, giving information on the use and abuse of the hand camera, to furnish a basis for a library. But the beginner too often neglects to become acquainted with the literature of the subject and teaches himself by his failures. This is very well when pocket and enthusiasm are sufficiently well developed to withstand the strain, but much trouble and

expense may be spared by commencing with some knowledge of photography, and of the particular camera employed. We see an acrobat dive from a dizzy height into a net. It looks simplicity itself. He simply falls head foremost, and the net does the rest. Yet, without considerable instruction and some preliminary practice, we should not expect to successfully imitate him. Jones, next door, with whom we were out last Saturday, simply 'held up his 5 x 7 hand camera some half dozen times and pressed a little catch. On the Tuesday following he presented us with half a dozen delightful souvenirs of the trip. But we must not delude ourselves with the idea that we have simply to borrow Jones' camera and go and do likewise, without preliminary instruction and much practice.

The hand camera, while apparently the most simple of all cameras, calls for the exercise of the best care and judgment of the operator. Its apparent simplicity is in many cases the cause of failure. The man who supposes that the camera does the work will soon find that he is laboring under a delusion. The camera is simply a wooden box, with a piece of glass in front and another behind. Left to itself, it will do nothing. The work is to be done by the individual, and upon his intelligent handling of the piece of apparatus will depend the results. To become proficient in the use of the hand camera, a knowledge of what others have done is most beneficial. This may be obtained by reading the journals and by consultation with friends who have already been through the mill. An apprenticeship with a tripod camera will be invaluable, giving an insight into the limitations of the hand camera that will be of no little service. Regarding the selection of a camera but little need be said here. Compactness and portability, combined with simplicity, are factors that should be considered. Too many working parts are not only unnecessary, but are apt to be a nuisance. The finder is an indispensable adjunct, but is usually more or less carelessly adjusted by the manufacturer. A finder that includes exactly the same amount as the ground-glass is a boon, giving an exact idea of the picture taken. If it is not correct it should be made as nearly so as possible by covering up such parts as are in excess of the image shown on the focusing screen.

Much has been written as to the best method of holding the camera during exposure. Some have advocated the holding of the camera under the chin, others under the arm, and many against the chest. Our advice is, try all three methods and then adopt the one you prefer. It will always be found advantageous, whenever possible, to let the body rest against some support while the exposure is being made. This greatly assists in preventing any slight shaking of the camera due to some involuntary motion of the body. As to plates, use always the quickest. If the subject is a very brilliantly lighted one, use a smaller diaphragm or a quicker shutter. The majority of failures are due to under-exposure. Beginners have an idea that camera and plates will do impossibilities, and the amount of material wasted by them in learning that an instantaneous photograph cannot be successfully made in a thick forest or in a dimly lighted interior is astounding. With the quickest of plates and well-illuminated subjects the conditions may be said to be normal. Under any less favorable circumstances under-exposure will have to be coped with. True, things may be partially remedied by the use of additional alkali in the developer or by immersion in a preliminary bath of alkali, but, whenever possible, start right and thus avoid the necessity of doctoring. If the amateur would learn to say no where a little thought would show failure, he would be a better photographer.

THE ELECTRIC LIGHT IN PHOTOGRAPHIC STUDIOS.

WE have already in our January and February issues noted the general desire evinced by photographers for some really practical system of artificial lighting. An efficient artificial light possesses enormous advantages over daylight. The light is directly under the control of the operator, and by the employment of a proper system of reflectors practically any effect may be obtained. The use of a constant source of light would be a great boon to the operator, enabling him to expose his plates with perfect accuracy. The state of the weather need no longer be taken into consideration, and photography at



NEGATIVE AND PRINT BY ELECTRIC LIGHT.

night, as well as by day, would be perfectly practicable. Again, the doing away with the necessity for a skylight releases the photographer from the obligation of hiring a special floor and permits of a free choice of locality. Sky parlors, reached by four flights of stairs, give place to a ground-floor studio with proper window space for the display of specimens. Portraiture with the amateur has been a subject dropped almost as quickly as taken up. The difficulty of properly lighting the subject has been so great that with a few exceptions little progress has been made.

Of all artificial lights the electric light is by far the best. It has been employed for some time in Europe with much success, and some American professionals have used it with advantage. It has not yet, however, received in this country, the home of electricity; the patronage it deserves. One of the earliest methods of using electricity for portraiture was the passing of a strong current through a thread of mercury dropping from a funnel. The thread is always breaking and re-uniting, and a good light, slightly tinged with green, is obtained. Though fairly successful, this method never met with any industrial success. The incandescent light is very suitable for darkroom illumination. It is a far more pleasant and convenient light than that given by the ordinary darkroom lantern and does not use up the oxygen of the air or give out much heat. For ordinary photographic purposes it is not well adapted. It is usually worked at such a temperature that few of the blue and ultra-violet rays are produced. If so strong a current be passed through that the lamp is on the point of rupture, a fairly good light is obtained, and a lamp under such circumstances might be used for some eight to ten portraits. But for all practical purposes the arc lamp will be found preferable, and, indeed, necessary. For copying, the fact that the light proceeds from what is practically a point is of no great disadvantage, while for enlarging it is a decided advantage. For portraiture the arc lamp is extremely well adapted, provided that reflectors are judiciously used.

In these days, when electricity may be obtained as easily as gas, there is no necessity for a lot of batteries or for engines and dynamos. Van der Weyde, of London, has used the electric arc light for many years, the arc lamp being placed in the focus of a parabolic reflector, and the direct rays kept from the sitter by means of an opaque screen. The light reaches the sitter only after reflection from a white or other colored reflector. It is thus well diffused and hard contrasts avoided. Friese Greene has used a somewhat different arrangement, placing a tissue screen between the lamp and the sitter. Given a uniformly working lamp and a proper arrangement of diffusing screens, the electric arc is the perfection of artificial light for portraiture. Such an arrangement we hope to describe in our next issue.

(To be continued.)

ITEMS OF INTEREST.

“THERE seems to be considerable doubt,” says *The Amateur Photographer*, “as to the use of the yellow screen. The greatest visual luminosity in the spectrum is in the yellow, which photographs as black. By using certain dyes we increase the sensitiveness of the silver salts to yellow, but the blue and violet sensitiveness of the plate is still far in excess of that for the yellow, so that a colored screen is used to cut down the blue rays transmitted by the lens. This is the sole reason of using a yellow screen.”

In the same journal, R. Child Bayley writes: “On no account judge a negative by its appearance when done, but take a print. A negative is essentially a means to an end, and not an end in itself, and one which yields an excellent print is of necessity an excellent negative, whatever its appearance may be. Do not be tempted to make the clean bright ‘lantern slide’ kind of negative,

which abounds in clear glass, and the deposit of which is a fine black color. As far as the resulting prints are concerned, a negative of a yellow or greenish color in which the amount of clear glass, apart from the edges, is almost imperceptible, will generally be found to be the best."

A PARTY in charge of Professor W. H. Pickering will soon set out from Harvard College Observatory to establish an observing station somewhere in the State of Arizona, the principal object of the expedition being to observe Mars during the favorable opposition next summer. The chief instrument employed will be a fine 18-inch refractor by Brashear, the objective of which was exhibited at Chicago.

FROM the *Mail and Express* of April 9th we cull the following: "East side photography has more than once been mentioned in these notes of metropolitan life, for the East side photographers are a very ingenious and hustling set, and their patrons and patronesses have many fancies to be catered to which the inhabitants of the other sections of the town do not appear to cultivate. The most recent innovation is that which one of the numerous photographers who now employ it as an attraction call 'spangulated and iridescent work.' A photograph which has been treated to the spangulated and iridescent process is in many cases a wondrous thing of spectacular and dazzling brilliancy. By means of tiny metallic spangles of gilt, silver and various bronze tints, as well as the use of brightly colored beads and small glass jewels, the ladies and gentlemen who have their pictures taken in fancy costumes can be made to resemble venerable princes and princesses in the splendor of their ornamental attire. The garments are loaded down with the glittering gems, necks and ears and wrists and fingers are adorned with jewelry, and it is merely a question of cost as to whether one displays merely a few thousand dollars' worth of such magnificence or the ransom of a king. For \$1.50 one can get a photograph that would make Solomon in all his glory look like the soberest of Quakers."

THE good people of St. Louis have been suffering from the photo swindler. This time it is the "enlargement" individual, who, collecting \$1 in advance, walks off with some much-prized photo and never shows up again. The warning issued by the sufferers states that a warm reception awaits the next caller, and, "if he ever escapes alive, he will find more enlargements in the region of the cranium than phrenology accounts for."

M. GUERONNAU, in the *Photo-Courier*, gives the following method for cleaning daguerreotypes: All greasy matter must first be removed from the image by plunging the plate in an alcohol bath (temp. 40 degrees) for a few minutes. After thoroughly well washing in distilled water, it is plunged in a bath of cyanide of potassium, 10 per cent. All impurities that marred the image disappear. The plate is then well washed with distilled water, flowed with alcohol and warmed over a spirit lamp to dry.

To increase the sensitiveness of a plate, when, for example, it is desired to take an instantaneous portrait in a gallery, it may be immersed, before exposure, in a bath made up of 2 parts of potassium bichromate and 100 parts of water for

about one minute. It is understood that this immersion must take place in the darkroom, and that the plate must be used at once while still wet.

With the approach of summer, apparatus that has been stored away during the dark days will be overhauled, and parts will doubtless need a little touching up. A good black for the woodwork, inside of camera and plate-holders, is made as follows:

Gum-lac	40 parts.
Borax	20 "
Glycerine.....	20 "
Water.....	500 "

After all is dissolved, add 50 parts of aniline black. For the metal parts use:

Copper nitrate	1,000 parts.
Alcohol.....	500 "

The copper nitrate must be melted before the addition of the alcohol. After cooling, immerse the articles until blackened sufficiently.

It is announced that an Universal Exposition will be held in Madrid from June to October. A photographic congress will probably be held.

For the backing of orthochromatic plates, in order to prevent halation, it is necessary to employ material that will absorb the green-yellow rays. The following solution is recommended for this purpose :

Collodion (2 per cent.).....	100 c.c.
Aurantia	3 grams.
Erythrosine.....	3 "
Castor oil.....	2 "

For ordinary plates a solution of aurine in collodion is sufficient.

M. WILSON, in the *British Journal of Photography*, gives a remedy for over-exposure. The plate is soaked in diluted chlorine water for from one to three minutes, drained, and developed as if it had been correctly exposed.

A FRENCH exchange says : "A committee has been appointed to raise a monument to Daguerre at Bry-sur-Maene, the birthplace and burial ground of the discoverer of photography. It is proposed to erect a monument worthy of France. At present there is but a simple tomb in which the Society of Fine Arts has placed a bust. The Americans have done better."

A SERIES of reproductions of drawings by old masters in the British Museum has been produced by the Autotype Company of London. These subjects varied greatly in character, in color, in the medium employed by the artist, and the sort of paper on which he worked. No photographic process but carbon printing could deal adequately with such subjects, requiring, as they did, a large choice of monochrome colors and of papers to correspond with the originals. The London *Times* says : "To such a point of perfection has photography now been brought that these reproductions are absolute fac-similes, only to be distinguished from the originals by a very practised eye. Altogether the collection is a perfect treasure of beautiful drawings, and a miracle of photographic reproduction."

WE are in receipt of the souvenir of the third annual lantern slide exhibition of the Camera Club of the Capital Bicycle Club. Over one hundred and forty slides were exhibited, the range of subjects being very large. "From the Maine coast to Florida glade, and from the beautiful and picturesque localities around Washington to the grand mountains of North Carolina, the C. Bi. C. cameras have been uncapped."

A WESTERN paper gives details of what it calls "a game of photographs." All the young lady participants in it produce photographs of themselves when babies, or, at any rate, when of a very tender age. These are arranged for inspection, and the young men are ushered in one by one to guess who are the originals. The one successful in guessing the most wins the game and receives the prize.

THE *Paris Photographe* gives the following method for obtaining red tones on bromide prints: After fixing and washing, the print is immersed in a 15 per cent. solution of bichloride of copper, and then thoroughly washed, being then placed for a few seconds in a solution of yellow prussiate of potash, and, after again thoroughly washing, placed again in the copper chloride solution, finally being well washed.

CHAPMAN JONES, writing in *Photography* on "Timing Exposures," says: "The circumstances that affect the time of exposure are the subject, the light, the lens, and the plate. The subject is so well recognized as affecting the exposure that we will do no more than mention it. Concerning the light, we would emphasize the fact that it may vary very much photographically when the change is hardly, if at all, to be recognized by the eye. Still, experience of meteorological appearances, taken in conjunction with the time of year and time of day, will often furnish a very good guide as to the photographic quality of the light, and this method of judging of the light may, with practice, become almost instinctive. But we believe that an actinometer, such as that on the Watkins' exposure meter, will prove much more reliable, especially in certain difficult cases, like interiors, and at exceptional times, as very late or early in the day." Regarding lenses, the author shows that "the rapidities of lenses are not of necessity constantly proportional to one another, and, when colored screens are used, their differences may become very marked." Plates, too, are not of fixed proportional rapidities, but vary in speed according to the circumstances under which they are used and the treatment they receive. He advises the beginner to carefully take into account all the affecting circumstances that he understands, to trust to experience to enable him to do this quickly, and to seek for further information as it may come to hand concerning these matters that are as yet but little understood.

IN the *Photographic Times*, page 239, in an article entitled "Credit Where Credit is Due," the admission is made that the *Times* has hitherto been lax in crediting appropriated articles, and better conduct is promised for the future. We would, therefore, like to see the announcement made that the greater part of the article on "Carbon Printing," on page 251, is copied bodily from ANTHONY'S

PHOTOGRAPHIC BULLETIN of 1888 and from a book entitled "Carbon Printing," by Max Boelte, copyrighted by our publishers in 1890.

WRITING of the Retocador, the electric retouching pencil, J. T. Heath, of Bangor, Me., says, "I would not be without it at any price." This instrument is certainly a great time and labor saver.

THE Messrs. Lumière find that the ceric sulphates and nitrates are sensitive to light, and have obtained impressions on papers coated with aqueous solutions of these salts.

VULCANITE and hard rubber articles of similar composition are cemented best by applying a hot melted mixture of gutta-percha and genuine asphaltum.

KEEP in mind the convention to be held from July 24th to 27th, inclusive, and remember the motto, "DON'T MISS THE ST. LOUIS CONVENTION."

ALL communications for the June issue, all new advertisements and any matter connected therewith, must reach us not later than May 23d.

PRINTING DODGES.

UNDER this and another heading a method was described in the April issue of the BULLETIN by which sketchy designs may be printed in with very little trouble, and in many cases with considerable advantage to the print. The half-tone reproduction shows an ordinary vignetted head surrounded by a light design, which, while not pronounced enough to be intrusive, gives a certain finish to the picture which is not present in the simple vignette. We recommend our readers to give Strauss marl and the mezzo plates a trial.



THE RELATION OF PHOTOGRAPHY TO ART.

BY C. ROTHERHAM.

ON a subject so well worn as the present there is but little hope of saying anything new. The following discussion finds its excuse in being based solely upon fundamental considerations as to the essential nature and limitations of photographic methods, and leaving to one side everything connected with their mere optical and mechanical difficulties or imperfections, which are constantly decreasing and may be overcome to we know not what degree.

Graphic art may be roughly divided, for present purposes, into two classes : (1) that which seeks to represent something, to make a truthful report of such and such facts, and (2) that which seeks to express something, to produce in the beholder such and such emotions. This will be plainer if we consider certain examples. In the first of these lines we may take Rousseau and Meissonier ; in the second, Turner and Mr. Edward Burne-Jones. Now in each of these groups one member is eminently a landscape artist, the other eminently a painter of the figure, and this is certainly a great diversity, yet we feel that they are at one as regards the end and aim of their work, the former pair constantly striving to represent certain facts ; the latter, to express certain emotions. No doubt each does in a measure the work proper to the other. Many artists of the first type raise in us powerful emotions, as many of the second give us truthful reports of fact ; but in the one case it is only by the way, and in the other, as means to an end. The distinction is not a hard-and-fast one to be sure, but it answers to a real difference, and every work is allied by the character of its aim to the one order or to the other.

Where, then, does photography stand ? In the art which aims at truthful reproduction there is no denying that the photographer starts with certain great advantages. Setting aside his mere mechanical difficulties, he can come nearer to depicting the object as it is, he can get closer to the "thing in itself," as the philosophers say, than the artist, subject as he is to his individual bias and manner, can hope to do. Accordingly in all that requires uncompromising fidelity of delineation the photographer is first and the draughtsman nowhere. We all know something of what he has done for microscopy, and to astronomy in its modern form the loss of photography would perhaps mean annihilation. In all this, however, its office is not artistic at all, but scientific, and its supremacy is due to nothing but its absolute accuracy. Now so far from this fidelity being all clear gain, the photographer pays dearly for it. To represent things, as he can and often must do, willy nilly more exactly than our imperfect senses can perceive them, is to represent them falsely. We never see a running horse as he appears in an instantaneous picture, nor do we make out the spokes of a rapidly turning wheel. Doubtless it is interesting and important to know that the horse takes up such unexpected postures in his stride, and curious to have the visual evidence that the upper spokes of a wheel move faster than the nether, but to the artist all this is nothing at all. The impression made upon us by a given object results from our physical nature, with all its imperfections, our acquired mental habitudes, and a thousand other things in which the camera can have no share. See how differently Nature presents herself to the eastern artists and the western, how diversely the same elements have impressed Claude and Turner, Corot and Monet. Now it is with these impressions that all graphic art must

deal. It must render the object, not as it is in itself, or as it would appear to a being gifted with perfect perceptions, but as it appears to us. When we see things rendered otherwise, we are conscious of a certain shock. And the superior fidelity of the photographer, in so far as it clashes with the turn of our nature, so far as it transcends the imperfection of our senses, is not an advantage, but a drawback.

This drawback is at its strongest, naturally, when the photographer attempts the art whose aim is expression. Nothing can be clearer. The artist who is to express himself must needs work with the forms of external nature—these are the words of his language. First of all, then, he must be free to pick and choose, he must select his material and then deal with it after his own mind. Here the photographer feels his handicap. His material is set before him, and his power over it, especially in the case of landscape, is of the slightest. Of course the landscape photographer can do a vast deal of work over his picture; he has “tricks and manners” innumerable which give him a certain degree, such as it is, of freedom, but that is quite a different thing to the artist’s control over his material. The latter’s freedom is another thing; provided that he does not too greatly strain our sense of probability, he can do whatever he pleases. While the photographer is limited to the treatment of such objects as he can get before his instrument, the painter can resort, if he see fit, to things that never were *in rerum nature*. The question of color is not in point here. For what we know, the photographer may reach that some day, and we are considering only the essential limitations of his art, not its accidental deficiencies.

Now, there is one department of the art of representation where the subject is eminently under the control of the artist, and where fidelity is of the greatest moment—namely, portraiture. Here, where the photographer’s control over his subject is at its greatest, should seem to be his most promising field. And when we consider such work as, for instance, the late Mrs. Cameron’s, it is hard to deny that the real achievements of photography lie here. Now, how does that extreme fidelity which is a handicap in one field of art, and all but fatal in another, act in this field?

The ultimate aim of portraiture—and in the greatest hands its result—is not to show how the subject looked at any particular moment, but to bring out his or her very nature. Take an impressive work of the greatest of all portrait artists, the equestrian picture of Olivares by Velasquez. We are not to suppose that the painter ever saw the old warrior looking just as he does there, no more than we are to fancy that he mounted him on horseback to prance about in that fashion, but there is the very man himself, not as he figured at such and such a time, but as he really was. This is the quality that distinguishes the great portraits. We see it in the work of Rossetti, of Mr. Whistler, and of Mr. G. F. Watts—the power of showing forth the very inner nature of the subject, always, of course, as the artist could conceive it. Now, when the photographer goes in for this sort of thing—the highest quality within the reach of portraiture—his old Nemesis is upon him again; his excessive fidelity binds him down to the facts of the moment, and there is an end of it. But here his control over his subject, finding its fullest play, affords him more relief than anywhere else, and here accordingly he may look for his greatest triumphs in the way of art.

All communications for the columns of the BULLETIN should reach us not later than May 23d.

INSTANTANEOUS PHOTOGRAPHY.

BY CAPTAIN W. DE W. ABNEY.

(Continued from page 125.)

THE writer has seen amateurs, and some who ought to know better, go into a gallery wainscoted with fairly dark oak, and use an instantaneous exposure to obtain a negative. Seemingly to such, if an apparatus is labeled as suitable for instantaneous work, any and every view is to be taken with a shutter. One trait in the general character of a young photographer is his credulity. He has implicit faith in the use and meaning of words, but forgets that photographic goods—like the peddler's razors—are often made to sell.

In calculating the stop to use and the exposure to give, the photographer should pay attention to several things before making his final determination. He should see how much sky, for instance, is available for illuminating the darkest part of his picture; also, whether the local color is a good one for reflecting photographic light. Thus, a red brick wall is not so good as a gray stone wall, for obvious reasons; or the dark green foliage of, say, a fir-tree not so fit for reflecting the necessary light as the paler green of an elm, and so on. He should determine to expose, as far as possible or practicable, for the deep shadows, so as to get something in them beyond general transparency. It may be noted here that, in any close views, there is scarcely any probability of over-exposing when a shutter is employed, the dark shadows being usually very black through want of atmosphere between the lens and the object. For open views this is, however, by no means the case. Over-exposure on a thinly coated plate means a flat image, which only intensification subsequently can render possible for printing purposes. It should also be remembered that white objects in the foreground (say, a white road) are difficult to deal with, but they are useful for reflecting light into the deeper shadows. When the sun is high in a cloudless sky, it is well nigh impossible to get a good landscape view; the shadows are too short and too black to deal with successfully, under any circumstances, and especially for instantaneous work. It is impossible to fix any altitude for the sun with which not to work, for so much depends upon the character of the sky. If there be fleecy clouds about, which act as reflectors of a good deal of the sunlight, views may be taken which should not be attempted if the sky were clear. On a bright summer's day it is not a bad plan to take a siesta before noon, have lunch, and afterwards smoke a quiet pipe, and then begin serious work. By this time the sun will have sunk to a reasonable altitude, and the hard work of the day will commence. On a gray day the camera may be at work without any such pleasant interval, and the effects will be almost as pleasing—or as little pleasing—at one time as at another.

When the sun is only 25 degrees above the horizon, exposures will have to be prolonged. The stop should be changed to a larger one then, and, as sunset approaches, one still larger should be inserted; and as a last resort, the shutter should be "slowed," as already explained. Not many photographers at home are accustomed to see sunrises in summer, but those who do should follow the same rules as for sunset work. It is often said that the light is better at sunrise than at sunset. This is so in some cases, but as often the reverse. If the sun rises or sets very red, the light will be worse than if it sets orange or yellow.—*Photographic Work.*

MODIFYING PLATINOTYPE PRINTS BY AFTER-TREATMENT.

BY A. W. DOLLOND.

IN a paper read before the Photographic Society of Great Britain, the author gives the results of "experiments made with the object of discovering a method of intensifying platinotype prints by depositing upon the developed image a further quantity of metal." Platinum and gold were the only two metals thus far tried, and of the two the gold appeared to be the more advantageous. Ordinary gold toning baths gave some intensification, but "many hours were required to effect any change; the color was disagreeable, and the print was badly stained all over." No useful result was obtained by "depositing gold on the print by reducing gold chloride with such feeble reducing agents as sulphites, oxalates, organic acids, and pyrogallol and other developing agents in a strongly acid condition." The author continues:

"I then used, as reducing agents, various organic compounds of a glutinous nature, such as gum, glycerine, sugar, treacle and glucose. Several of these, employed in a faintly acid condition, gave promising results; glycerine especially answered well. The reducing action of glycerine alone upon gold chloride is very slow; no metal is deposited for ten or fifteen hours, but when applied to a platinum print, the metallic platinum in the image by its attraction for the nascent gold hastens the action, and the gold chloride is then reduced in a few minutes. Under these conditions the metallic gold adheres closely to the platinum. The viscosity of the glycerine appears to play an important part, possibly by acting as a mechanical check on the rapidity of the deposition of the gold.

"The first action of the toning solution on the print is to increase slightly the strength of the image without changing its color very much, but as more and more gold is added, the color becomes first blue-black, and finally almost blue. If the original image is at all brownish in color, the effect of slight toning is to convert it into a pure black. Unless the toning is continued to an extreme extent, there is very little tendency for the gold to be deposited on those parts of the print where no platinum is present.

"The first prints prepared were toned to the required extent, and then simply washed and dried. I found later, however, that simple washing was not in every case sufficient to remove all the gold chloride from the paper; for, after keeping some weeks, a few of the prints showed a pinkish tinge on the high lights. It is probable that the gold chloride may, if left for any considerable time in contact with the size in the paper, form a compound of some description with it, and is then not removable by washing. Even rinsing the prints, after toning, with weak hydrochloric acid did not entirely prevent the pink color appearing. The simplest means of insuring the absence of any gold compound which would be liable to change appears to be to treat the prints after toning and slight washing with an alkaline developer, so that any gold remaining will be completely reduced to the metallic state. After this treatment, a moderate washing to remove the developing solution should render the prints quite free from any tendency to change. None of the prints I have prepared in this way have shown any sign of alteration.

"The solutions required are:

1. Gold chloride.....	15 grains.
Distilled water	7½ drams.

"Neutralized with chalk, filtered and 1 drop of strong hydrochloric acid added.

2. Glycerine.

3. Sodium sulphite 1 ounce.
 Water up to 10 ounces.
 Metol 50 grains.

4. Potassium carbonate 1 ounce.
 Water up to 10 ounces.

"The following is the method of application :

"The platinotype print, developed, cleared, and dried in the usual way, is soaked for two or three minutes in water, then laid upon a flat surface, preferably a sheet of opal glass, and blotted to remove the excess of water. Next, glycerine is gently spread over the whole surface of the print with a soft brush or the finger-tip. When evenly coated, a few minims of the gold solution are dropped on and rapidly mixed with the glycerine with a soft camel-hair brush. Very soon the print will begin to gain in strength, and assume the blue-black color. During the whole time the toning is proceeding, the surface of the print should be brushed lightly and quickly, in order to insure even action and to constantly bring fresh gold chloride into contact with the platinum image ; also there seems to be less tendency for a deposit to be formed on the high lights if the solution is kept in motion. The high lights should be watched, and as long as they remain clear, the action may be allowed to continue. When the desired effect is obtained, or when any coloration is seen in the high lights, the print should be quickly rinsed, to remove the adhering glycerine and gold. After this, a mixture of equal parts of metol and potash solutions is sponged over, both front and back of the print. Washing for half an hour completes the operation.

"Prints may be kept after development for some weeks, or even months, before toning, but very old prints will not readily tone. If the weather is cold, the water and dishes used will probably require to be slightly warmed, or the action will be very slow. Prints are best toned in good daylight, as it is easier to see that the gold is kept evenly distributed over the print, and daylight also assists the action and renders the process more rapid than when performed by gas-light. The general effect of the toning action is to slightly increase the contrasts in the print, as proportionately more gold is deposited where there is a large quantity of platinum present than where there is a small quantity. The best results are obtained when the actual increase in intensity required is small only.

"The methods of treatment I have described will, I think, be found to have four distinct uses :

"1. To strengthen under-exposed prints.

"2. To convert a rusty or brownish color in a print into a pure black.

"3. To produce blue-black in the place of black prints when this modification of color is considered desirable.

"4. To enable brighter prints to be obtained from flat negatives than is usually possible by the ordinary method.

"The treatment can be applied to most silver-printing processes, but, as a rule, the improvement is not very marked.

“In conclusion, you are aware that other workers have published methods of modifying platinotype prints, and I trust the few examples I have brought are sufficient to indicate that we shall find, by further experiment, the means of producing still more variations in the tone and character of our platinum prints.”

ANGLE INCLUDED BY A LENS.

In an editorial on this subject the *British Journal of Photography* says :

“It seems to us that some information of a popular nature concerning the covering power of lenses, the angle of view capable of being included on any given size of plate, is still needed, notwithstanding all that has in times past been written on the subject. We judge this from queries that are being frequently put relative to topics of this nature.

“A question very commonly put assumes this form : ‘How can I ascertain what angle of view will be included on, say, a $6\frac{1}{2} \times 8\frac{1}{2}$ plate, or any other size, by the use of such lenses as I possess?’ Or this, ‘What is the difference between a wide-angle and a narrow-angle lens, and which will prove the more useful?’

“The first thing necessary is to know what is the focus of the lens that is to be employed. This, for our present purpose, can be ascertained by measuring the distance between the ground-glass of the camera and the stop, if the lens be a compound one of rapid rectilinear form ; or, if it be a single landscape lens of plano-convex configuration, the distance between the ground-glass and the convex surface nearest to it. In either case the measurement obtained will represent the equivalent focus of either class of lens, provided any distant object has been brought to a focus on the ground-glass previous to measuring the distance. When once the focus of the lens is known, it is a very easy matter to ascertain the amount of angle of view that will be embraced on any plate or any portion of a plate capable of being covered by that lens.

“On the present occasion we shall confine ourselves to one such method, which is undoubtedly the simplest of all, inasmuch as it involves the possession of no skill beyond that of drawing three straight lines.

“Draw a horizontal line on a sheet of paper. This may be of any length, but should not be shorter than the greatest dimension of the plate. It will, perhaps, be more convenient to make its length exactly coincide with the longitudinal dimension of the plate, less that cut off by the rebate of the dark slide, by which a certain portion at each side is rendered of no effect, and hence must be excluded from the calculation. From the center of this horizontal line erect a vertical line, which must exceed in length the focus of the longest lens that is intended to be used with the particular camera. On this vertical line measure off the focus of the lens, placing one foot of the compass at its junction with the horizontal line, and from the focus thus marked draw lines to the terminals of those showing the dimensions of the plate. This gives the angle of view included on that plate by any given lens. What the special angle may be is ascertained by placing a protractor over the lines and reading off the degrees.

“One such chart as we have indicated can very advantageously be made to serve for a whole battery of lenses. It is only needed that a variety of focal-distance points be marked upon the central vertical line, and a series of connect-

ing lines be drawn between these and the terminals of the horizontal line. We have found it advisable that these be done in inks of different colors, and at the apex of each to place figures in the same color of ink, indicating the focus of the lens and the angular subtension of the lens there marked.

“Instead of duplicating the radial lines from the focus to the size of plate, one vertical line, with a horizontal one of half the primary length, will prove equally effective, but in this case the number of degrees included by the vertical and the diagonal lines must be doubled.

“It sometimes happens, owing to the length of the mount or some other cause, that, instead of the plate being properly covered, the corners are left dark. This is not unavoidable, although the application of the remedy may develop a small evil; still, on the other hand, it may not do so. The wider the separation of the front and back lenses—in other words, the longer the tubes in which they are mounted—the smaller will be the area of illumination, and, of course, the plate that is to be covered must form a quadrangle within this circle; but, by adopting the expedient of bringing the front and back lenses closer together by setting them in a shorter mount, this area of illumination may be increased to a considerable extent, even to the extent of illuminating a plate twice the dimensions of that for which it was sent out by the optician. But, in proportion as the circle of illumination is thus increased, so must the lens be stopped down, to keep up an equality between the central and marginal definition, for rounding of the field is the concomitant of reducing the distance between the lenses. In some cases, more particularly with lenses of a cheap foreign variety, the objective is actually improved by this treatment, the marginal definition being better than it formerly was. This is a matter which each one must try for himself. We have, however, known a lens which covered a quarter-plate imperfectly, having been made, by the mere bringing together of the two lenses, to cover a 5 x 4 plate well without any stop.

“It is not quite easy to differentiate between a medium-angle and a wide-angle lens. One in which the focus and the base line of the plate to be covered are equal represents an included angle of 53 degrees, and this may be considered a fair center of a borderland between the medium and the wide-angle.”



WHEN copying subjects that are in alto or intaglio, care must be taken to so adjust the lighting that the full effect of the shadow and relief is obtained. A direct light falling on the object will give a flat picture devoid of reality and interest. The light should come from the side, and must be fairly strong. We recently had occasion to photograph a silver medal that for forty years had been worn by one of the heroes of Balaklava. To obtain the best effect the medal was pinned on to a background of black velvet and illuminated by a strong side light, adjusted so that the parts worn shiny by use should not reflect any strong light into the lens. A small diaphragm was used to get every detail, and full exposure given. The developer must be so adjusted as to give plenty of contrast, while at the same time all the detail is brought out. By careful lighting and a judicious use of potassium bromide the full effect of the relief may be obtained. When colored ribbons are part of the subject, a properly orthochromatized plate should be employed.

LANTERN SLIDES.

BY H. S. NUTT.

CONSIDERABLE has been written on this subject, but from the numerous inquiries it would appear that either the articles failed to touch on some important point with sufficient clearness, or something necessary had been omitted. There is nothing difficult in the production of slides, and with a little care and use of brains very good ones should be made, with few losses. The plates on which they are made being supplied all ready for printing, either by contact or through the camera, have relieved the amateur of many of the troubles that surrounded him in the old wet-plate days, when it was a necessity to prepare the bath, developer and intensifier, and have them in perfect order. A streak, comet, or some other of the many imperfections that were constantly showing themselves, have been done away with, and in place we have a neat parcel containing twelve plates on fine thin glass, cut to proper size, ready for use, and at will. These plates, being what are termed "slow dry plates," can be handled in much stronger light than the more sensitive landscape plates; hence, in printing by contact, sufficient non-actinic light can be used to adjust the plate on the negative, so that the picture will occupy the desired position. The handiest light to use for printing I have found to be one of the patent gas jets, which is apparently extinguished when the gas is turned off, but is actually lighted in a small tube below the regular jet, and enclosed in a case surrounding the burner. On turning the tap, the small jet lights the regular burner.

The time of exposure requires practice and judgment. Holding the printing frame about 15 inches from the burner, I give from five to ten seconds, depending upon the strength of the negative and its color. If desired to show more on the slide than a contact print will yield, the entire negative can be printed in the same space as occupied by the opening of the mat, by copying it through the camera. As these cameras are sold and advertised by your publishers, I will not describe it here further than to say it is a double camera, one which the lens goes in the center compartment, the negative on one end, and the lantern-slide plate on the other, the size of subject shown on the plate being determined by the position of the lens. When using 4 x 5 negatives, the 4 x 5 camera will be found more convenient, and, when once set in position, all the negatives can be copied without changing the position of lens or plate. An extra holder is advisable, for, when one picture is printed, a new negative and plate can be exposing while the previous one is developing. I use a lens with minute diaphragm that will require at least three and a half minutes' exposure. This gives me time to put the last exposure in the tray, and look at those being developed, and to remove finished ones from the hypo, etc.

The camera should be pointed at the sky without anything intervening. If this is not practical, put a clean, smooth piece of tissue paper in the window, and point the camera at it, with fully 2 feet space between the negative and the paper. If placed too close, there is danger of photographing the grain of the paper through the clear parts in the negative.

For developer I find that a weak one is necessary, and use the same kind as for developing the negative, adding an equal bulk of water and from one to two drops of a saturated solution of bromide of potassium. The development must be carried until the image appears much denser and stronger than wanted

in the finished slide. It will thin out wonderfully in the hypo soda. This latter must be clean, and I never use an old fixing bath. I add 3 ounces hypo to 1 pint of water, and to this 1 ounce of acid sulphite of soda. This latter is most useful in the hypo bath for negatives.

After the slides are properly fixed, they must be thoroughly washed. I emphasize the word thoroughly because if you value your slides and wish to keep them perfect, you must eliminate all the hypo. The acetate of lead bath, as introduced years ago by the late Mr. H. T. Anthony, is the most effectual of all. After washing in two changes of water for fifteen minutes each, place the plates in a solution of 1 ounce of acetate of lead, dissolved in 1 quart of water, allowing them to remain for ten minutes. Then remove and wash in fresh water for at least half an hour, changing the water every ten minutes. You can then rely on there being no hypo in them.

Put on a rack to drain and dry, where no dust can deposit on them. A grain of dust magnified in the lantern looks quite large, and if it should happen to lodge, where I have known them to, in the eye of a subject on the plate, it will spoil the entire effect.

In mounting them, I take the mat, and, placing it on the picture in the exact place I wish it to occupy, hold it firmly, and moisten the slide with a wet brush under the mat close to the edge, then press the mat down until it sticks. These are then allowed to dry, when they can be piled one on the other. Clean the cover glasses, ending by polishing with chamois or wash leather. Next cut your strips of gummed paper, of which I use the manilla, called "Sheplie gum paper." The strips are cut just 15 inches long, which allows one to go entirely around a slide and lap $\frac{1}{2}$ inch. These are moistened with a brush, and, although at first they are inclined to curl considerably, will soon lie perfectly flat and ready for use. I have three or four ahead of the one being used, which saves considerable time. Dust the slide carefully, then the cover glass; place them together and hold with the thumb and forefinger by the center of each glass. Place the edge on the gummed strip about 3 inches from the end. Fold this end up against the edge, turn in the corners, then wheel the slide along, repeating until it is finished.

The title can be either written on the margin of the paper, or an extra slip be pasted on the end of slide for such. When dry, clean both sides, and the slide is ready for the lantern.

The exposure is the all-important consideration. If the plate is under-exposed it will come out in the development to a certain point and stop there, void of details. If over-exposed, the details will come out before sufficiently strong, and the plate should be put at once in a weaker developer with greater proportion of bromide.

There is no more beautiful way of keeping a record of pleasure jaunts than by making a series of slides from the negatives and showing them to your friends. Paper photographs seem insignificant before them, and I have many negatives that have been used only for slides. The work of making the slides is nothing compared to the recompense in exhibiting them. A very handy parlor screen is easily made by taking 5 feet of white roll paper same as used by artists, 54 inches wide, and gumming each end to two plain curtain rolls. This can be suspended in the room almost anywhere, and its clean, white surface shows off the slide to perfection. I prefer the picture shown not over above size in a

private house, and the result is better than where larger screens are used, unless a light much stronger than oil gives is used.

JOTTINGS FROM GERMANY.

Action of Camphor on Gelatine Plates.—To discover what part, if any, the camphor contained in films plays in the defects often appearing in these substitutes for plates, a few dry plates were kept covered with powdered camphor for fourteen days. Other plates were laid in a solution of camphor for three weeks, while some were exposed for three hours to the vapor of camphor. Viewed externally the plates showed no change whatever, and during development neither fog nor spots appeared. Eoside of silver plates, however, when treated similarly, showed considerable fogging after two days.

The Latent Image.—Herr Franz, of Austria, claims to have succeeded in obtaining the actual material forming the latent image, that is, to have isolated the same from the unexposed bromide of silver not acted upon or changed by light. The quantity formed being very minute, plates having an area of 500 to 1,000 square meters have to be exposed to obtain sufficient material for experimental purposes. A very remarkable property of this substance is that it is unaffected by light. Separated from the unaltered bromide of silver it cannot be changed by further exposure. The following question presents itself: If this substance be deposited on an unexposed plate, will the part so changed be capable of development?

Economical Toning Bath.—Dr. Miethe says that the borax bath is the most economical gold bath for albumen and collodion papers. It has the advantage of being certain, simple and of easily yielding cold tones, if desired. If correctly used, it is very economical, and the whole of the gold not actually consumed is readily recoverable. The expense of toning is thus reduced to the lowest possible figure. He gives the following process: A light-colored glass bottle, holding about 68 ounces, is filled with distilled water, to which $3\frac{1}{4}$ ounces of borax are added. By stirring occasionally, this will saturate in a few hours, leaving some undissolved borax on the bottom. For use, the necessary quantity of this stock solution is poured into a tray and 1 minim of chloride of gold solution (1:200) is added for every ounce of stock solution used, and the toning carried out. After toning, the bath is poured into the stock bottle, which is put in a place where it is exposed to light. After a few hours, a bluish black precipitate of finely divided gold will form. The bath may be repeatedly used in the same way, care being taken that none of the sediment is poured out into the tray. If, after frequent use, the bath does not clear, but remains of a grayish red or brown color, it should be left standing for several hours, adding during that period a little sulphate of iron. The sediment should be filtered and preserved. After thorough washing of this sediment in boiling water and heating, the product will be pure gold with a little silver sulphate.

Damaged Plates.—The following remedy is given, in *Photo Rundschau*, for plates which have been damaged by the film having come in contact with printed paper, and have in consequence received an impression: They should

be washed for some time in a 2 per cent. solution of glacial acetic acid, then well washed, immersed in alcohol, and developed in a vigorous developer.

Electric Light in Photography.—The photographic firm of Kalmár & Székely, in Vienna, have lately fitted up their establishment with electric light. They use for illumination four incandescent lamps, two of which can be moved according to light effect desired, and two are used for top light. On the sides and underneath the latter are frames with ground-glass, covered with white or blue curtains, according to requirements.

Berlin Exhibition.—An international exhibition by amateur photographers is to take place in Berlin in 1895, under the auspices of the Empress Frederic. The “Deutsche Gesellschaft von Freunden der Photographie,” and the “Freie Photographische Vereinigung,” the two principal amateur photographic societies of Berlin, are making great preparation.

Stamping Card Mounts.—To stamp names and designs in colors upon photo-card mounts, colored stamps are ordinarily used, or leaf-gold or bronze is pressed into the board to be ornamented. According to a new process, colors of suitable composition are spread over well-glued and calendered paper, and, after drying, transferred to the cards by means of a heated stamp. For white, the following mixture is applied: 1,000 parts of water, 6 parts gelatine, and about 60 parts of glycerine are rubbed in with zinc white, baryta, or white lead, and the paper is uniformly spread with this color and well dried. The paper, with color downward, is laid upon the card mount to be ornamented, the heated stamp is pressed on in the usual way, and the color is then transferred from the paper to the support. The process corresponds, therefore with color stamping, but is said to have the advantage that the colors cover better, show more uniform surfaces, and do not extend beyond the edges. All colors other than white are obtained by addition of the required color to the described mixture.

Curling of Films.—Herr L. L. Lewinsohn, of Berlin, gives a method for the prevention of the curling of films during drying. He lays the films with the film side downward upon a table, and covers the upper side with a 1 per cent. solution of caoutchouc in benzole, by means of an atomizer. After waiting a few minutes, during which time the benzole has mostly evaporated, two negatives are laid together, back to back, and they are thus united to one. No curling will now take place any more, even after the negatives are separated again.

An African Contemporary.—The first photographic paper ever published in Africa will shortly make its appearance in Algiers, under the name of *Photo-Revue Africaine*. Its editor is the well-known expert, Louis Ducos du Hauron.

Printing of Bank Notes and Other Papers of Value.—The possibility of counterfeiting bank notes and other financial papers, says Carl Angerer, has become greater since photography has been applied for this purpose. Still, there are certain ways to protect such valuable papers from counterfeiting. These means are the following: The principal picture should

be a copper engraving, whose under support has been produced by a fine etching machine. In this manner the very fine lines of the etching are obtained, besides a very strong picture, which has its origin from the copper engraving. A dull blue serves as printing color. In the attempt to reproduce such a print photographically this circumstance will cause particular difficulties, as it is hardly possible to obtain the strong and weak lines at the same time upon one plate. It is further of advantage to employ a fiber paper as support, which contains yellow, brown, or light yellow, hardly perceived by the eye, but rendering photography pretty difficult.

Does Ruby Glass Change?—This question is answered in the affirmative by Dr. Miethe. He says ruby cylinders, after they have been in use for years, are less secure to light. They are generally flashed on the inner side. Heat and draught diminishes the thickness of the glass and the red layer becomes gradually thinner and thinner until it finally is not sufficiently dense. The so-called green glass, containing iron in its structure, and discolored with manganese, will have a violet tinge in the course of time, because the coloring iron salt will change, leaving the manganese finally predominant.

Permanency of "Aristo" Prints.—Herr Belitski, in Nordhausen, has made some interesting investigations about the nature of the collodion film of "Aristo" paper, which explains why the pictures, if correctly manipulated, are much more constant to light than albumen prints. If a drop of a solution of cyanide of potassium is put upon an "Aristo" print and on a print on albumen paper, a difference will be observed at once. The albumen picture is almost destroyed, while the "Aristo" picture resists the corrosive action. The reason for this is, that the horny collodion film resists the penetration of the liquid. The still unexposed "Aristo" paper is, on the contrary, extremely penetrable for aqueous liquids, because the collodion, mixed with the other substances added to same, contains a great many pores. This explains the easy toning and fixing of such pictures. Collodion pictures will have a still greater resistance, if they are coated with a good varnish.

Metallic Spots on Negatives.—Lainer writes, spots of a metallic, glossy or foggy appearance sometimes appear near the edges of negatives after fixing and washing. These are not easily removable by chemical means, but must be obliterated in order that a perfect print may be obtained. These spots are probably due to silver sulphide and are on the surface of the film. They can be removed easily by rubbing the spots carefully with a piece of chamois leather after the negative has thoroughly dried. The use of alcohol is unnecessary.

Recovery of Residues.—Repeated tests show that the developing liquids (washings) collected in the wet collodion process do not contain a sufficient quantity of sulphate of iron to precipitate the greatest part of the dissolved silver. If a little muriatic acid is occasionally added, the silver will precipitate, the iron remaining in solution. The liquid can then be poured off on the day following, to make room for a fresh lot. In some large establishments the silver is reduced by zinc plates which are suspended in the barrel holding the washings. Potassium sulphide is finally added. Although the zinc plates entirely precipitate the

silver, this method is not so good as the addition of muriatic acid, for the zinc plates are rapidly destroyed. The subsequent addition of potassium sulphide is useless, for the precipitation of the silver is effected by the zinc alone.

Plain Silver Prints.—A. Einsh gives the following method for the preparation of paper for plain silver prints: Three grams of starch are finely ground in 100 c.c. of water in a mortar, and 2 grams of sodium chloride (salt) are dissolved in the mixture. The paper is coated with this mixture by means of a soft, clean sponge, working from right to left, care being taken that all parts of the paper are well moistened. A final circular motion will help to ensure an even coating. The dried paper is sensitized with the following solution:

Silver nitrate.....	10 grams.
Water.....	100 c. c.

This solution is applied to the paper with a sponge, but without pressure. Any of the ordinary toning baths may be used.

Toning Platinum Prints.—A correspondent of the *Photographische Chronik* writes that he has successfully changed the black tone of a platinum print to a warm tone between sepia and reddish brown, but adds that he has thus far only experimented with paper for cold bath development. The print is made as usual, perhaps a shade darker, and developed in the potassium oxalate solution. It is recommended, however, that a few drops of a saturated solution of bichloride of mercury be added, more or less, according to the tone desired. After development, the print is placed in the usual acid bath—muriatic acid, 1 part; water, 60 parts; and then into a second acid bath, twice as strong. This is necessary to insure the removal of every trace of iron from the paper. If traces of the iron salt are present, disagreeable yellow tones will result. After this treatment, the print is well washed and toned in the following bath:

Red prussiate of potash.....	2 parts.
Uranium nitrate.....	8 “
Acetic acid.....	60 “
Water.....	800 “

The color of the image passes through reddish brown to a red, but a pronounced red tone can only be obtained if a sufficient quantity of bichloride of mercury has been added to the developer. After toning, the print is thoroughly washed.

Bromide Enlargements.—Local Development.—Bromide enlargements can often be considerably improved if the development of certain parts can be continued while that on other parts is arrested. This may be done by developing in the ordinary way with the iron developer until the greatest part of the picture has obtained the correct strength. The developer is then poured off and replaced by a bath of dilute muriatic acid, which at once interrupts development. After a short time, this acid is replaced by a fresh lot, which is kept in one corner of the tray by tilting the latter. The parts that need further development may now be treated with more iron developer by means of a brush, and, as soon as they reach the desired intensity, the tray may be tilted and the action stopped.

AMMONIUM SULPHOCYANIDE, SULPHOCARBAMIDE AND THIOSINAMIN.

BY R. ED. LIESEGANG.

THE three substances mentioned above, which, as solvents of the silver haloids, possess a certain interest for practical photographers, are nearly related. Sulphocyanide of ammonium passes into sulphocarbamide upon the application of heat. Thiosinamin is an offspring of sulphocarbamide. Ammonium sulphocyanide dissolves silver chloride in considerable quantity, but the latter is precipitated again on the addition of water, necessitating a subsequent fixing with hyposulphite of soda. The behavior of thiocarbamide is of most interest, because the price of this article has been reduced in half a year from 150 marks to 35 marks. A concentrated thiocarbamide solution (1 part thiocarbamide to 11 of water) readily dissolves pure chloride of silver. When the solution is diluted with water, the chloride of silver is not precipitated. But in the printing-out process we have not pure chloride of silver, but a mixture of silver chloride and nitrate. If nitrate of silver is added to a solution of thiocarbamide, a voluminous white precipitate is formed, which is not soluble in an excess of thiocarbamide. It dissolves easily in all acids, but is again precipitated by addition of water, to be redissolved by more acid. If sulphuric acid be added to the washing water, the precipitation is prevented. The greater the volume of washing water used, the greater the quantity of acid necessary, the proportion varying with the acid employed.

Alkalies change the precipitate into a red body, which, after a few minutes, passes into black sulphide of silver. The precipitate formed by the addition of silver nitrate to ammonium sulphocyanide is easily soluble in the latter, and is not changed into sulphide by alkalies. The action of thiosinamin on pure silver chloride is similar to that of sulphocarbamide. Water does not precipitate the salt, and alkalies do not form sulphide of silver. The solvent power of thiosinamin for silver chloride is greater the more it is diluted, within a certain limit. Silver nitrate forms a white compound when added to concentrated thiosinamin solution, but this compound is easily soluble in excess of either. Thiosinamin, therefore, seems to be the only one of these three compounds that is suitable as a fixing medium for printing out silver chloride papers.—*Photo-Archiv*.

A SIMPLE METHOD FOR MAKING COLORED TRANSPARENCIES.

In the *Photo Courier* M. Ganichot gives an apparently easy method for obtaining transparencies in various colors. This he has successfully used for some time. The process is based on the fact that bichromatized gelatine becomes insoluble after exposure to light. If a glass plate, coated with bichromatized gelatine, is exposed under a positive, and after such exposure is plunged into a bath of colored liquid; the soluble portions will absorb the coloring matter, while the insoluble parts are unaffected and constitute the whites of the picture. A thoroughly cleansed glass plate is coated first with a solution of potassium silicate, and, after drying, is coated with gelatine, and the latter allowed to set. To sensitize the plate it is immersed for three minutes in a solution of bichromate of potash, 3 parts of the latter to 100 of water, and then dried quickly

in the dark. Such plates will keep for three or four days. The prepared plate is exposed under a positive in the printing frame for from ten to twenty minutes, until a brown image is obtained. It is then washed under the faucet to carry off all excess of bichromate until the wash water is no longer yellow. The parts unaffected by the light swell out into relief by the absorption of water. To color the plate it is immersed in any of the following baths:

RED BATH.

Carmine (in grains).....	5 parts.
Liquid ammonia.....	15 "
Water.....	120 "

BLUE BATH.

Prussian blue.....	50 parts.
Oxalic acid.....	50 "
Water.....	150 "

YELLOW BATH.

Gamboge.....	50 parts.
Saffron.....	50 "
Water.....	150 "

Boil together for five minutes and filter.

VIOLET BATH.

Permanganate of potash.....	10 parts.
Water.....	100 "

GREEN BATH.

Prussian blue.....	50 parts.
Oxalic acid.....	50 "
Picric acid.....	15 "
Water.....	150 "

Dissolve by heat.

Use can also be made of the aniline colors by dissolving 1 part of each in 10 of water. The transparency is plunged into the coloring solution and occasionally washed in running water. When the whites are clear, the plates may be dried. Instead of coating plates with gelatine, the ordinary dry plate of commerce may be used, being previously fixed and washed; or old negatives may employed by removing the image in a solution of—

Red prussiate of potash.....	5 parts.
Hypo.....	15 "
Water.....	100 "

and washing well. Avoid plates that have been treated with an alum bath.

THE PRODUCTION OF PHOTOGRAPHIC LENSES.

BY K. FRITSCH.

In the manufacture of photographic objectives, as well known, only the finest flint and crown glass is used. Until 1886 this was procured from Chance Bros., of Birmingham, or Mantoix, of Paris. Since the establishment of the glass works of Schott & Co., in Jena, glasses of extraordinary optical constancy are at the disposal of opticians, but they are pretty high in price on account of the expense of production (8 to 75 marks per kilo.). The glass is required to have in all its parts an uniform refractive index; it has to be homogeneous, and much time and great care must be taken in the stirring of the liquid glass mass,

and the cooling off of the same, as otherwise the so-called "streaks" will form, which are the cause of indistinct pictures.

Dr. Schott prescribes, therefore, a strict observation of the cooling process, and submits the produced glasses to a minute examination. For objectives of less value, such as are used in the cheaper detective cameras, the glass is almost in a finished state as it comes from the form and press, which facilitates the finishing considerably.

For the better class of objectives, plates of a described size are cut off from a cooled glass block. In Jena this is done with a rotating steel disc, in the edges of which diamond dust is wedged; in my own workshop I use a rotating copper disc, emery and water. The so-obtained glass plates are then rounded with a pair of nippers and shaped upon the cutting machine.

The most important part of this machine is a disc (tray), made of iron or brass, which corresponds exactly to the radius of curvature of the lens, and is set in circular motion by a wheel. The workman puts emery into this tray, turns the wheel with one hand, and presses, with the other hand, the glass towards the side of the tray. The glass, coming in contact with the emery, will gradually assume the shape of the tray. In the beginning coarse emery is used, and gradually finer emery is applied, which gives the glass the necessary fine polish. Great attention has to be paid to this work, and particular care must be taken that the lenses obtain the calculated thickness and proper radius. Scratches in grinding have also to be avoided.

In polishing it is best to proceed according to directions recommended by Fraunhofer: to polish according to colors. This is based upon Newton's color rings, which originate if two nearly equally curved polished glasses are laid one upon another. For a convex glass a sample glass is made, plane upon one side and concave upon the other, with the exact radius intended for the convex surface, and polished. If the convex glass is now polished, and the hollow sample glass (concave) is laid upon the same, colored rings will be seen, which are wider in proportion to the exact fitting of the two glasses, and as soon as both glasses fit exactly, they will assume a uniform light yellow or blue color. How sensitive this method is the following table will show:

Extreme red.....	0.000161 mm.	0.000012 mm.
Boundary of red-orange.....	0.000149 "	0.000007. "
Orange-yellow.....	0.000142 "	0.000009 "
Yellow-green.....	0.000133 "	0.000010 "
Green-blue.....	0.000123 "	0.000008 "
Blue-indigo.....	0.000115 "	0.000005 "
Indigo-violet.....	0.000110 "	0.000008 "
Ultra violet.....	0.000102 "	

The numbers in the first column indicate the thickness of the structure at the place, where, when looking upon the same in a vertical direction, a Newton's ring of the color in question is seen; the second column contains the corresponding differences. In this way the eye can recognize differences of $\frac{5}{1000000}$ to $\frac{12}{1000000}$ of a millimeter. This method is so sensitive that a slight touching of the glasses with the hand is sufficient to produce a change of color. But such a sensitive method is necessary, as even defective radii and thicknesses are not so injurious as defects in the shape of a curve, these resulting in the obtaining of indistinct, poor images. A good deal of the success of German opticians is due to this method.

The polishing is done with oxide of iron on a machine on which a curved handle sets two wheels in motion. The one wheel gives to the lens to be polished, which is screwed upon a spindle, a rotary motion; the other effects by an eccentric the correct motion of a pitch tray pressed on to the glass. Concave surfaces are mostly polished in such a way that the pitch tray runs upon the spindle, and the glass takes the place of the pitch tray.

The polishing machine is changeable and enables the operator to change the shape of the glass, or to grind and polish it into a globular shape. Cheap photographic objectives and condensing lenses, where the polish is of more account than an exact globular shape, are ordinarily polished by hand on the block by fastening several upon a support corresponding to the radius, and grinding and polishing them with a suitable tray.

A final point which has to be observed in the production of objectives is the centering. A lens is centered if the central points of both lens surfaces are in the optical axis of the system. For this an exact lathe, centering head, a feel lever and a support are used. The lens is put upon the axis of the centering head, and the latter is regulated by means of six screws until the arms of the feel lever rest, when the spindle is set in rotation. The eccentric edge parts of the lens surface may be ground off by putting emery mixed with water between lens and support, bringing the lens in rotating motion, and directing the support gradually towards the edge. Centering defects cause uneven sharpness. Such defects are recognized if the objective is turned in a circle; the defect in the picture upon the ground-glass will then likewise move if mechanical defects are present.

If two lenses are joined, they have to be well centered. They are fastened with Canada balsam, and mounted.—*Wiener Phot. Blätter*.



SENSITIVE PAPERS IN VARIED TINTS.

THE sensitized papers found on the market do not always give an image of the color desired. The following is a process that may, with advantage, be tried by amateurs, and has the advantage in that an image may be obtained in any of the colors found in the ordinary color boxes:

A cake of the color desired is mixed with water until a semi-fluid paste is obtained. Any good water-color will answer the purpose. One part of this color paste is then mixed with 2 parts of a thick solution of gum arabic and 2 parts of an 8 per cent. solution of ammonium bichromate. The mixture should be made in a mortar, so as to obtain as homogeneous a compound as possible. Sheets of white paper may now be coated with this mixture by means of a flat brush. After drying thoroughly in the dark, they are ready for exposure behind a negative, some ten to twenty minutes being necessary. Development is effected by immersion in lukewarm water, the image appearing slowly. Those parts that have been acted upon by light, having become insoluble, the coloring matter contained remains intact, while the rest is washed out.

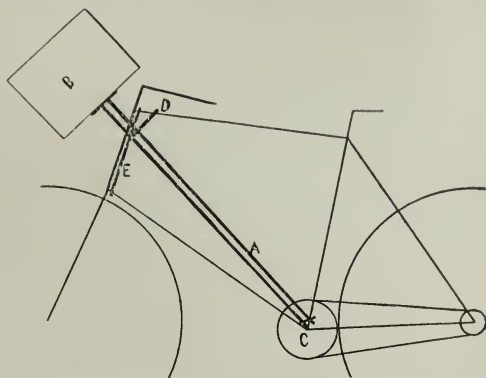
Monochrome prints on white grounds are thus obtained. If polychrome images are desired, the general contour of the negative image is marked on a sheet of paper by means of a pencil, and each part colored with the bichromate color mixture corresponding to the color of the original. The paper is now adjusted to the negative, printed, and developed with warm water.—*Photo-Gazette*.

CORRESPONDENCE.

THE CAMERA AND BICYCLE.

DEAR SIRS,—In the April number of the BULLETIN I notice a query by O. P. M. regarding a special arrangement for carrying a camera on a wheel, and for his or her benefit I will describe my method of carrying my 5 x 7 folding camera.

I first screw the camera upon the folded tripod, and then put it upon one side of the frame in a slanting position (as shown in the sketch) from the upper part of the head to the crank bracket. Then I fasten the tripod A to the frame at C by putting one leg on the opposite side of the frame from the camera and binding it there



by a strap at D. I place a very strong elastic strap around the tripod and over the upper frame tube, so as to let the camera vibrate up and down with C as a center. At E I place a strap around the frame, over the upper and under the lower frame tubes, putting the inside leg between the strap and frame.

With this arrangement the wheel can be ridden at any speed over the roughest of roads without jarring the camera in the least. Steering is accomplished as easily as without a load.

I have several times ridden eighty or ninety miles inside of six or seven hours with as much ease as if without the camera.

Yours,

W. F. COOPER.

OUR ILLUSTRATION.

WE flatter ourselves that our frontispiece, while different from the studio posing study usually presented, will be received with favor by our readers. Mr. Frank A. Place is well known as a professional photographer who is up to and almost ahead of the times. The juvenile gamblers are indulging in a quiet game of craps, friend Place having put up a sufficient stake to distract their attention from the camera. The light used was from the Williams flash machine. We had hoped to reproduce the familiar features of Mr. Place, but must defer it to another occasion.

COLOR-SENSITIVE PLATES.

Dr. H. W. VOGEL, in *Photographische Mitteilungen*, points out that color-sensitive plates are as yet little understood by the majority of workers, and gives some suggestions as to causes of failures. He writes :

“A good deal has already been written in most of the photographic journals about color-sensitive plates, and it is, therefore, actually astonishing how few have a thorough comprehension of the real character of the subject. The gen-

eral idea is, that color-sensitive plates can be treated in the same way as ordinary plates, and people even do not seem to know that there is an enormous difference between ordinary eosin plates and eosin silver plates; that the ordinary eosin plates cannot be used without a yellow glass, while eosin silver plates can be used without them in most cases. It is also not generally known that the durability of the eosin silver plates is a shorter one, although an instance is known where these plates were preserved in excellent condition for one and a half years.

"But such are exceptions which depend upon the quality of the almost daily changing gelatine.

"There is certainly very little known about our investigations regarding the color-brightness of the atmosphere, according to which the quantity of the yellow, red and other colored lights is subject to enormous deviation. On some days we have an excess of yellow light; on other days there is but little. L. Weber already has discovered enormous deviations in the color brightness of the atmosphere by optical observation.

"The proportion between red and green rays in December was 2.62 to 4.64; in January, from 2.26 to 4.10; in June, 2.27 to 4.07. Of a still stronger action are the deviations between yellow and blue. We have observed days on which the yellow light outweighed the blue considerably, and the yellow action upon color-sensitive plates was phenomenal; but on other days, again, the blue light was so predominant that very little was to be seen of a yellow action. On such days, when the yellow light is poor, the color-sensitive plates are not of such a great advantage. The same color-sensitive emulsion, which on bright days with white clouds had a stronger effect on yellow than on blue, was of only a weak yellow action on a cloudy day in February. In such cases a yellow glass is of advantage.

"Mistakes are also made in the development. In color-sensitive plates the blue develops always first; much later the yellow. If the plate is therefore taken out too early from the developer, it will have the impression of an ordinary plate. The yellow had not sufficient time to fully develop. Care must also be had for a good darkroom light; the ordinary red light is not good for color-sensitive plates. Numerous fogged plates are the effect of this error. Of twenty ruby lamps, which I saw at an exhibition, there was not one to be found suitable for color-sensitive plates, as shown by a spectroscopic test which had been made."

On the same subject Baron von Hübl, in the *Photographische Blätter*, remarks:

"Our atmosphere is not colorless; it darkens rather the view at a distance, similar to a blue fog. In photographing with a blue-sensitive plate, this light-blue fog acts so powerfully that it is hardly possible to obtain even traces of distant objects.

"But even in nearer objects, at distances of several hundred meters, a fog caused by the atmosphere while not perceptible to the eye, is apparent photographically. The deep shadows are wanting, and a gray monotonous picture is obtained of a landscape seemingly enveloped by fog.

"But if a plate is employed which is not sensitive to blue rays, the light-blue-appearing distant objects are rendered darker; the blue shadows will be without effect, and appear powerful in the print.

"In this respect the orthochromatic plate gives surprising results in landscape work. We observe at a comparatively short distance a clearing action; the

foreground unites harmoniously with the strong and excellent middle part of the picture, and the background is not bounded by the well-known fog-silhouette, but shows an artistically effective and richly detailed distant view. The distance, of course, must not be reduced too much, and the aerial perspective perceptible to the eye must also be preserved.

"By a suitable selection of the yellow screen, the desired effect, according to conditions, can be obtained. The darker such a glass, the less effective will be the action of the blue rays, and the more powerful and clearer will be the perspective.

"The selection of the yellow glass depends, also, very essentially upon the class of plates to be used. There are orthochromatic plates, which have a considerable yellow-green and very little blue sensitiveness; these therefore, can be used in many cases without yellow glass. On the other hand, there are plates, in the market whose difference from the ordinary plate is only recognized after the application of a yellow screen."

PHOTOGRAPHY IN MINES.

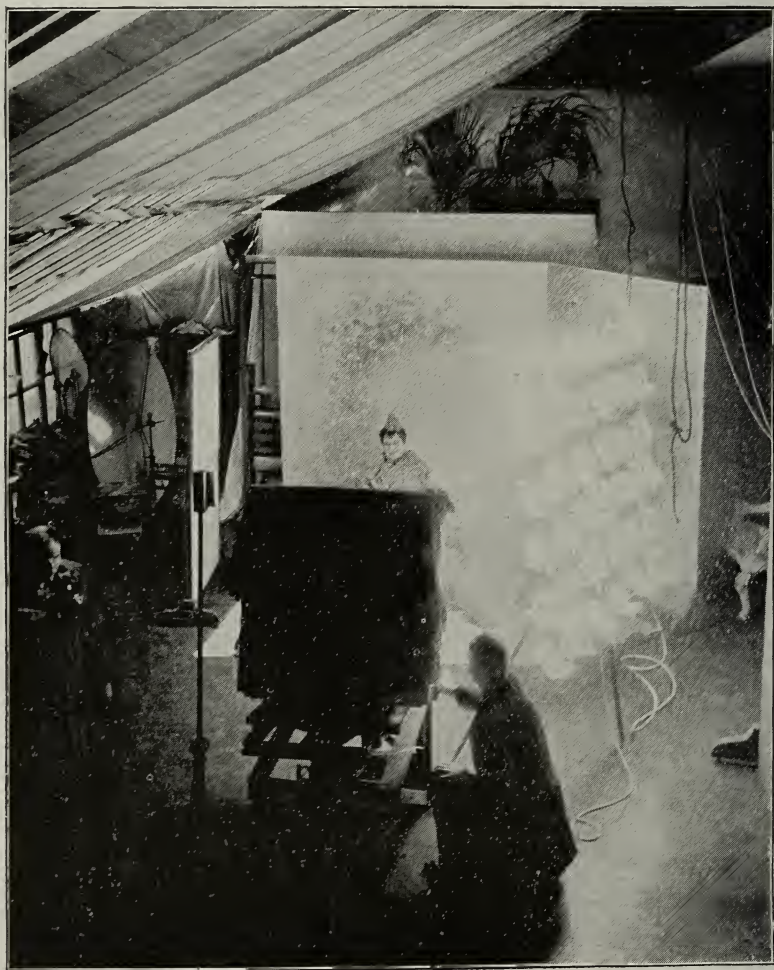
PROBABLY one of the most interesting pictures in the exhibition held last week was that from which, by permission of Mr. H. W. Hughes, we have made the half-tone here reproduced. Writing anent this picture, Mr. Hughes



says: "This particular view shows two men engaged in the operation called single-handed drilling. The boring tool is struck rapid blows with a hammer and rotated between between each blow. The man on the left is in the act of striking, while the one on the right is cleaning the fine débris, made by the chisel edge of the boring tool, from the hole he has been engaged on. The lens used was a Ross rapid symmetrical, aperture $f/11$. Thirty grains of magnesium powder were burnt in an ordinary flash lamp, the approximate time of exposure being about five seconds. Plate developed with pyro and ammonia.

FLASH-LIGHT PORTRAITURE.

WE reproduce here in half-tone two pictures that cannot fail to be of considerable interest to our readers. The first one shows the interior of the well-appointed studio of Messrs. Jones & Lotz, of San Francisco, and was made by the same light and at the same moment as the second illustration. The light, as will be seen, was furnished by a Williams flash machine, 5 grains of blitz



pulver being placed in each one of the thirty-six cups, making 180 grains all told. The first picture was made with a wide-angle Dallmeyer lens. The general arrangement of flash machine, camera and reflector will be made apparent by the picture. The distance from the middle of the flash machine to the chair upon which the subject was seated was 7 feet.

The second picture shows the object of the flash, and is reproduced from a 25 x 30 print. The lens used was a 16 x 18 Dallmeyer rapid rectilinear, with an aperture $\frac{3}{4}$ of an inch in diameter. This covered the 25 x 30 plate perfectly, and the resulting picture shows that full exposure was given. The bulb that

worked the flash lamp also worked the shutter, so that flash and shutter exposure were simultaneous. The Williams flash machine we described fully in the January issue of the BULLETIN. Thirty-six square feet of a strongly actinic light are obtained by the projecting of blitz pulver from thirty-six cups into a series of gas flames. As regards the picture itself, it is probably better than any that could



have been obtained under like circumstances under a skylight. There is an absence of flash-light "glare" and a pleasant appearance of comfort not always obtainable unless taken instantaneously.

From the general interest aroused by the introduction of this lamp and of the electric lamp for photographic purposes, it is very evident that artificial lighting is to have a great future. In the past, lack of suitable materials has been the only obstacle. Such is not the case now, and much time and study is being devoted to the best means for giving the photographer a constant light and a light that is always obtainable.

THE SEVENTH ANNUAL EXHIBITION OF PHOTOGRAPHS.

IN many respects the most notable exhibition ever held in this country, and conspicuous by the entire harmony that has prevailed, the seventh annual exhibition was worthy of New York and a credit to the three societies. There was an agreeable lack of poor work, due to the fixing of a certain standard of merit. Of 1,361 prints submitted, 753 were accepted. The judges have carefully done their work, and their awards have met with general approval. They are as follows: Silver medals to—

No. 61—"In the Shade of the Willows," Rudolph Eickemeyer, Jr., Yonkers, N. Y. (member Society of Amateur Photographers of New York).

No. 71—"The Thicket Walk," J. N. Hignett, Chester, Eng.

No. 99—"On the Racquette," Miss E. V. Clarkson, New York (member Society of Amateur Photographers).

No. 717—"Stormy Day at Brighton," Ernst Edwards, New York (member Society of Amateur Photographers).

No. 108B—"Homeward Bound," Enrique Alexander, Barcelona, Spain.

No. 127—"Manœuvres of Spanish Cavalry," Antonio Amatller, Barcelona, Spain.

No. 212—"Midsummer on the Housatonic," C. R. Pancoast, Philadelphia, Pa.

No. 223—"Fairbanks House," Henry Troth, Philadelphia, Pa.

No. 303—"Green River," Hinsdale Smith, Springfield, Mass.

No. 324—"Locating Camp," Lewis Cohen, London, England.

No. 389—"Foreground Study," Clinton Ogilvie, New York (member Society of Amateur Photographers).

No. 391—"Path Through the Woods," J. V. Black, New York (member Society of Amateur Photographers).

No. 405—"Foggy Day off the Battery," W. B. Post, New York (member Society of Amateur Photographers).

No. 446—"Meditation," Chas. J. Berg, New York (member Society of Amateur Photographers).

No. 543—"Tableaux, "Miss M — as Statue of the Republic," James L. Breese, New York.

No. 560—"Naubuc," R. A. Wadsworth, Hartford, Conn.

No. 589—"Plowing," Baron Julius Waldberg, Vienna.

No. 614—"Autumn," James C. Goold, Newcastle, Eng.

No. 626—"Studies from the Nude," Hall Edwards, L.R.C.P., etc., Birmingham, Eng.

No. 714—"Washing at Orta," James Sinclair, London, Eng.

President's medal awarded by R. A. B. Dayton, president of the Society of Amateur Photographers of New York, to the member exhibiting best photographs (all his own work):

No. 64—"Sweet Home," Rudolph Eickemeyer, Yonkers, N. Y.

Of twenty medals, twelve went to American exhibitors, five to England, and three to other countries.

A PITTSBURGH reporter tells about a yawning oil well. Somebody must have been boring it.—*Siftings*.

CARBON PRINTING.

PHOTOGRAPHIC SOCIETY OF JAPAN.

An ordinary meeting of the above-mentioned society was held at the rooms of the Geographical Society (Chigaku-Kiokai), Nishikonya-cho, Kiobashi-ku, Tokyo, at 5 p. m. on Friday, March 16th, Mr. H. G. Parlett in the chair.

Mr. W. K. Burton then showed Dallmeyer's newest form of tele-photographic lens. If he had known that Mr. Kajima was going to disappoint them in the matter of his promised views of Fuji, he (the speaker) would have brought samples of the work of the new lens, and have given a full explanation of its working. This he would do at the next meeting. In the meantime, he would only say that the new lens seemed to reduce tele-photography to the greatest simplicity it could be reduced to. Mr. Burton also showed some work with Edwards' orthochromatic plates, and showed the yellow screen that he used. The screen was made simply by coating "patent plate" with a solution of gelatine and picrate of ammonia. The screen was placed in actual contact with the plate, and this, he stated, was the right, and the only right, place for a screen when using dry orthochromatic plates. The results were much better than with a screen of optically ground glass near the lens. Picrate of ammonia was of the exact color wanted for orthochromatic work, the curve of absorption nearly corresponding with the curve of sensitiveness of bromide of silver. Then there was the ease with which screens of the kind he showed could be made. Mr. K. Arito had coated half a dozen of them, of different depths of tint, in half an hour.

Messrs. W. K. Burton and M. Kondo then gave a demonstration of the "Carbon," or pigment process, of which the following is a brief description: The name "carbon process" had been given because all the earlier efforts to work out a permanent process were directed towards the use of lamp-black, which is nearly pure carbon—one of the most permanent bodies in Nature—and in the first successful pictures made by the process lamp-black only was used. The "pigment process" was, however, a better term to use, for one of the beauties of the process was that any pigment that did not react with gelatine or chromic acid salts could be used, and if the pigment were permanent, so would be the resulting pictures. The process depended on the fact that, if gelatine were treated with any of certain salts of chromic acid, it became sensitive to light, in the sense that the action of light rendered it insoluble even in hot water; whereas, not acted on by light, it retained its solubility. The material principally used was what is technically known as "carbon tissue." This is merely paper coated thickly with gelatine and some pigment. The tissue used was by the Autotype Company, of London, which firm had the reputation of issuing no tissue with pigments other than permanent.

Five different colors were shown, namely, "engraving black," "photographic brown," "photographic purple," "sea green," and "red chalk" or "Bartolozzi red." The tissue is sensitized by dipping it for a minute or two in a chromate solution. A simple solution of bichromate of potassium, of a strength of 2 to 3 per cent., is commonly used, but the demonstrators preferred to add ammonia to this solution, till the bright orange color changed to a pale yellow. This change of color indicated the conversion of the bichromate of potassium into a double chromate of potassium and ammonium. This procedure had first been

recommended by Dr. Eder, and it was the opinion of many carbon workers, among others the demonstrators, that tissue sensitized with this double salt kept better than that sensitized with bichromate of potassium. The tissue is dried without artificial heat. A great deal depends on the time taken for drying. The best results are obtained when this time is from four to eight hours. The printing is done in the usual way, the tissue being of about the same sensitiveness as sensitized albumenized paper. There is no visible image, and an actinometer is commonly used for timing the exposure. The demonstrators were not possessed of an actinometer, and merely placed one or more small selected negatives, with a strip of sensitized albumenized paper under each, in printing frames alongside of those in which the carbon tissue was being printed. That this simple process was efficient was shown by the fact that, of the couple of dozen or so of prints developed during the evening, only one was incorrectly exposed, and this, although many of them were from negatives from which carbon prints were made for the first time, and in spite of the extremely trying weather they had had during the past few days—at one time brilliant sunshine with a dry atmosphere, then shortly rain, an atmosphere saturated with moisture and variable light. These conditions made the judging of the exposure of carbon tissue extremely difficult, especially so on account of the “continuing action of light.”

Development is the next process, but procedure varies according to whether the subject is one that will permit of reversal—as many portraits, for example, will—or a reversed negative is used, or whether a negative not reversed is used, while the print also must not be reversed. In the first instance, the “single transfer” process is used; in the second the “double transfer” process. In the single transfer process the print is immediately attached to its permanent support; in the double transfer process, it is fixed to a “temporary support,” on which it is developed, and from which it can be stripped to the permanent support. In either case, development proceeds in the same way. The support and the insolated tissue are placed in cold water together. The tissue first curls inwards, and then begins to curl outwards. Just at this moment the two are taken from the water, in contact, face to face, and a squeegee is passed rapidly over the back of the tissue. The tissue and support are now placed together under a light pressure for ten minutes or more, when it is found that adhesion is perfect on account of atmospheric pressure brought to bear by the swelling of the gelatine of the tissue. In practice, a number of sheets of support and tissue are piled one upon another, and, when all the day’s work is so piled up, the pile is turned over, and development begins with what was the bottom print. Development is done with warm water only. The print, together with its support, is placed in a dish of warm water..

Presently it will be seen that the pigmented gelatine begins to ooze out from the edges of the tissue. The paper of the tissue is now removed, and the dirty black, brown, purple, red or green mass that is seen on the support is laved with warm water. Presently the picture begins to appear, merely by the washing away of the pigmented gelatine, and in a minute or two it is complete. If the single transfer process is being worked, the print is now finished, but for a dip in an alum bath which is generally given to harden the remaining gelatine, but is not an essential part of the process. If the double transfer process is used, procedure is different. Sheet zinc is often used as a temporary support,

but the demonstrators preferred to use Sawyer's "flexible support," as it is easier to work with it than with a rigid support. The flexible support is paper treated with certain lacs to render it waterproof, and treated before use with a weak solution of beeswax in benzine. The picture is developed on this flexible support, when a sheet of "permanent support" paper is brought into contact with the image. They are allowed to dry together, when they will separate, the image adhering to the permanent support, while the temporary support is ready for use again. If a long exposure is given to tissue—about three times that needed for a print—and it is developed on plate glass, a very beautiful "transparency" or "diapositive" is the result.

After Messrs. Burton and Kondo had finished their demonstration, members of the Society who had never worked the carbon process were invited to try their hands in developing a number of exposed prints that remained over. This several members did with perfect success, demonstrating the ease with which the process may be learned.

The proceedings ended with a vote of thanks to the Chairman.

SOCIETIES.

ORANGE CAMERA CLUB.—At the annual meeting held in March the following officers were elected: President, W. H. Cheney; Vice-President, Dr. J. L. Seward; Secretary, H. R. Turhune; Treasurer, W. T. Baird; Chairman of Lantern Slide Committee, J. L. Yatman; of Library, W. P. Thorpe.

PEABODY CAMERA CLUB, of Salem, Mass., has disbanded. Cause, lack of interest.

CALIFORNIA CAMERA CLUB.—Otis A. Poole's famous lecture, "A Day in Yokohama," was greatly appreciated. Preceding the lecture a troop of performing Japanese from the Japanese village at the Midwinter Fair gave a clever exhibition.

PITTSBURGH AMATEUR PHOTOGRAPHERS' ASSOCIATION.—New organization. Officers: President, E. M. Katz; Vice-President, J. E. Hathaway; Secretary and Treasurer, Ross Wilson.

DIXON CAMERA CLUB, Dixon, Ill.—At the regular meeting held April 5th the following officers were elected: President, E. E. Shaw; Vice-President, A. A. Phelps; Treasurer, H. A. Brown; Secretary, G. H. T. Shaw. It was decided to devote the coming summer to the collection of material for a series of lantern-slides, with the idea of joining the Lantern Slide Interchange next fall.

BALTIMORE PHOTOGRAPHIC CLUB—Officers: President, A. S. Murray; Vice-President, Dr. Frank Slothower; Treasurer, E. M. Barker; Secretary, Chas. E. Needles.

CALIFORNIA CAMERA CLUB.—New officers: President, C. A. Adams; Vice-President, H. C. Tibbitts; Second Vice-President, W. J. Street; Treasurer, G. W. Reed; Secretary, C. F. Cormack; Librarian, H. C. Owens; Corresponding Secretary, C. S. Close.

Anthony's * Photographic * Bulletin.

EDITED BY

**Prof. CHAS. F. CHANDLER, Ph.D., LL.D.,
FREDERICK J. HARRISON.**

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OUERY COLUMN.

N. B.—We cannot undertake to answer questions of a technical character except through the columns of the BULLETIN. Correspondents will please remember this. No attention will be paid to anonymous communications.

H. F.—For method of cleaning daguerreotype, see page 147. Many thanks for article. Will appear in June issue.

NOVELTY STUDIO.—Pictures crowded out of this issue.

D. S.—Method of making screen described in BULLETIN of October 14th, 1893, page 599. Fix a plate and precipitate barium sulphate in the film by soaking plate in barium chloride, and then in any sulphate.

L. H.—Brooklyn Institute print exhibition at 174 Montague street, middle of May.

D. H. H.—Many thanks for pictures.

E. C. H.—The lenses may be obtained through our publishers.

G. W.—Thanks for your letter.

BOOKS RECEIVED.

WE have to acknowledge with thanks the receipt of the following: "British Journal of Photography, 1894"; "The Acme Guide"; "Niewenglowski" (Gaston Henry) "Le Matériel de l'Amateur Photographe" (Paris: Gauthier-Villars et fils), a guide to the amateur photographer, giving the properties of the necessary apparatus and many useful hints on their defects and repair. Also four parts of the "Encyklopädie der Photographie," viz., "Die Photographie in Natürlichen Farben," by E. Valenta; "Die Collodium-Emulsion," by Von Hübl; "Photoxylographie," by Alex. Lainer, and "Die Photographie auf Forschungsreisen und die Wolkenphotographie," by Neuhauss. Publisher, W. Knapp, in Halle a/S. These authors are all very well known to our readers. The books are of the greatest interest and value, and we hope to give a more extended notice of them. In the April issue of THE BULLETIN will be found an extract from Valenta's book.

TABLE OF CONTENTS.

	PAGE		PAGE
ACTINOMETERS FOR CARBON PRINTING.	141	MODIFYING PLATINUM PRINTS BY AFTER-	
AMMONIUM SULPHOCYANIDE, SULPHO-		DEVELOPMENT, <i>by A. W. Dollond</i>	153
CARBAMIDE AND THIOSINAMIN, <i>by R.</i>		OUR ILLUSTRATION.	167
<i>Ed. Liesegang</i>	163	PHOTOGRAPHY IN MINES.	169
ANGLE INCLUDED BY A LENS	155	PRINTING DODGES.....	149
A SIMPLE METHOD OF MAKING COLORED		QUERY COLUMN.....	176
TRANSPARENCIES	163	SENSITIVE PAPERS IN VARIED TINTS..	166
BOOKS RECEIVED.	176	SOCIETIES	175
CARBON PRINTING	173	THE CAMERA AND BICYCLE, <i>by W. F.</i>	
COLOR-SENSITIVE PLATES.....	167	<i>Cooper</i>	167
CORRESPONDENCE	167	THE ELECTRIC LIGHT IN PHOTOGRAPHIC	
FLASH-LIGHT PORTRAITURE	170	STUDIOS.	144
INSTANTANEOUS PHOTOGRAPHY, <i>by Capt.</i>		THE HAND CAMERA . . .	142
<i>W. de W. Abney</i>	152	THE PRODUCTION OF PHOTOGRAPHIC	
ITEMS OF INTEREST.	145	LENSES, <i>by K. Fritsch</i>	164
JOTTINGS FROM GERMANY.	159	THE RELATION OF PHOTOGRAPHY TO	
LANTERN SLIDES, <i>by H. S. Nutt</i>	157	ART, <i>by C. Rotherham</i>	150
		THE SEVENTH ANNUAL EXHIBITION... 172	



ELECTRIC LIGHT PHOTO.

PRINTED ON AMERICAN "ARISTO" PAPER.

ANTHONY'S Photographic Bulletin.

EDITORS :

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

FREDERICK J. HARRISON.

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WARM WEATHER TROUBLES.

WITH the advent of warm weather the troubles and trials of the photographer will increase and multiply. During the winter months effort has been made to keep things warm enough, but in the summer, with heat and humidity as his enemies, the photographer will do well to adopt every precaution to prevent those annoying little mishaps, which, many of them, spring from easily avoided causes. Hands, hot with perspiration, leave their traces on plates, films and papers, and mysterious blemishes appear in a most unaccountable manner. Dust finds its way into the camera and plateholders, and the plate manufacturers are blamed for pin holes. Negatives left to dry on the window sill, a place which once seemed the very ideal situation for a negative rack, lose their identity, a shapeless mass on the warm stone being an object lesson on the low melting point of wet gelatine. Prints adhere to negatives, and here the wise man, who has varnished his plate with the proper medium, will find cause for self-congratulation. Often this adhesion occurs only along a line, just where the hinge in the printing frame backboard comes. Remedy, use a pad between print and back, and use always printing frames having tongued backs.

Probably the chief trouble encountered during warm weather is that known as frilling. By frilling is understood the separation of the film from its support, the gelatine puckering up into little folds or wrinkles. Upon this subject J. Gaedicke writes: "One of the most disagreeable features in developing is the loosening of the gelatine film, commencing at the edges, and often ending in the entire destruction of the picture. This frilling will always occur when the expansive power exercised by the water upon the gelatine is greater than the adhesion between the gelatine and the glass plate. There are several causes for this appearance. The fault may be due to impure gelatine. But supposing we had faultless gelatine, the defect may arise because of over-cooking of the emulsion. With normal gelatine and a normal emulsion imperfect adhesion between film and support may cause frilling, this lack of adhesion arising from failure to

correctly prepare the glass. Finally the frilling will occur if plates are packed before thoroughly dry." Summing up, we may say that frilling may arise from the following causes inherent to the manufacture of the plate: Impure or unsuitable gelatine (too hard or too soft), prolonged cooking or excessive temperature during ripening, imperfect elimination of the soluble salts during the making of the emulsion, imperfect cleaning of the glass plate before coating, and packing before drying.

In the early dry-plate days frilling was of much more common occurrence than nowadays, and doubtless was largely due to errors in manufacture. With better-made plates has come comparative immunity from frilling, though it is yet sufficiently prevalent to require guarding against. Sudden immersion in solutions of differing temperatures will often start the trouble, especially if the transition is from a cold to a warm bath. The developer may be kept cooled with ice, and if the fixing solution be freshly made up it will probably be cool enough. Placing a negative directly under the faucet must be rigidly avoided. Too much forcing during development, and even differences in density between two solutions, will start frilling in some plates. Where a batch of plates show a decided tendency to frill, a little paraffine wax should be run around their edges before commencing development. Grease, rubber solution or varnish may also be used. Captain Abney suggests, as a general remedy, coating the plates with plain collodion made up as follows:

Tough pyroxyline	6 grains.
Alcohol (0.82).....	$\frac{1}{2}$ ounce.
Ether (0.725)	$\frac{1}{2}$ "

This is to be applied just before development. The plate is first washed in water until all the solvents are washed away and the developing solution then applied. Immersion in a solution of chrome alum after development and before fixing will prevent frilling. Now, alum when brought into contact with alkaline developers gives a precipitate which is not removed in the after processes. It is, therefore, necessary to carefully rinse the plate after development, before placing it in the warm bath, and again before fixing. With the ferrous oxalate developer no such precipitation occurs, and the only effect of adding alum is to somewhat retard development.

Should the frilling occur during alkaline development, washing before the alum bath will increase the evil. Gaedicke recommends the removal of the developer by washing with a strong solution of common salt. The carbonates will be removed, and the plate can then be placed in the alum solution. Frilling during development may be avoided by adding sulphate of soda (Glauber's salts) to the developer. Where frilling, in spite of all precautions, does occur, the plate should be immersed for a short time in a bath of common alcohol.

THE HAND CAMERA.

FOCUSING in a hand camera is largely a matter of practice. It is usually necessary to be of rapid movement when making an exposure, and there is seldom time to examine the image on the ground-glass. While focusing finders are theoretically of enormous value, they have been but little adopted, owing partly to their expense and partly to the fact that after all they are

not really necessary. They are certainly a luxury, but to a careful worker not a necessity. Whenever possible it is well to focus by examination of the image on the ground-glass. But with a little practice our beginner will learn to so nearly approximate the correct focus as to make such examination quite unnecessary. In the hand cameras so largely in use to-day it will be found that if the focusing index be set opposite the scale mark 100, everything will be apparently sharp, excepting objects very close indeed to the camera. But focusing is a matter for practice.

With regard to exposure it should be remembered that everything depends upon the exposure and development. Properly expose and develop a plate, and you have a good negative. Under the heading of exposure, selection of subject may well be classed. The beginner usually will be guided by nothing but his own sweet will, and if he will in turn be profited adequately by his results, there is no harm done. But a moment's thought will often save a plate. First, see that foreground, middle distance and background are of a character calculated to bring about a picture similar to that you had in mind when determining on making an exposure. Next, avoid a preponderance of foreground and see that the camera is level. Unless the subject is well lighted, leave it alone. Beginners usually pay but little attention to the time of exposure, using the same speed of shutter all the time and rarely changing the diaphragm. But by varying both of these no little benefit is derived. There is no necessity for the highest speed of the shutter when photographing anything but rapidly moving objects that are fairly close to the camera. Give as long an exposure as possible consistent with a sharp rendering of the image.

As to development the majority of amateurs use one-solution developers. With these some little change may be made by diluting the solution or by adding a little carbonate of soda or potassium bromide as occasion requires. But for intellectual development we would strongly recommend two-solution developers, and pyro and soda as the best adapted for all-round work. With exposures made out of doors with the hand camera there is no means of accurately judging as regards over- or under-exposure, and the developing process must be so conducted that in either case a good negative may be obtained. An under-exposed negative may be improved, if, before the high lights have become too dense, a strong effort is made to bring out detail in the shadows. An over-exposed negative will not be so flat if, before the general detail is all out, density is imparted by using less alkali, or by the addition of potassium bromide.

The developing solution may be said to have three active ingredients, the reducing agent (pyro, hydroquinone, eikonogen), the accelerator (carbonate of soda), and the restrainer (potassium bromide).

Increase of pyro gives increase of contrast; increase of carbonate of soda gives increase in detail and in speed of development; and increase of bromide gives increase of contrast and retards development.

Having, then, these three factors, and bearing in mind the part each plays in development, it becomes comparatively easy to develop if the exposure has been approximately correct. The solutions may be made up according to any of the given formulas, and development commenced with rather less than the required quantity of carbonate of soda. If the image comes up slowly and is lacking in detail, add a few drops of the soda solution. We recently saw a professional

photographer add this accelerator by pouring it in one corner of the tray. This is so obviously incorrect that any further mention of it is unnecessary. Any solution that it is desired to add to the developer should be poured into a graduate and the bulk of the developer added to it, the mixture then being poured over the plate.

During development certain contingencies may arise which are better met by the knowledge of a few dodges. Certain portions of the image may have been considerably under-exposed, and a sufficient increase of carbonate of soda to the solution to accomplish their development would hopelessly over-develop other portions of the plate. These obstinate parts may be greatly improved either by lightly brushing them with a camel's-hair brush charged with a dilute solution of sodium carbonate, or, if but little increase is desired, by holding the plate quite close to the mouth and breathing on those parts that are under-developed. If, on the contrary, some parts are so over-exposed as to show signs of clogging up before the rest of the plate is properly developed, these portions may be held back by brushing with potassium bromide solution.



THE ELECTRIC LIGHT IN PHOTOGRAPHIC STUDIOS.

In our May issue we outlined the advantages of an efficient artificial light in the studio, and claimed the premier position for the electric arc light, provided a proper lamp and correct system of reflectors are employed. Before entering into a description of the particular arrangement we have in mind, it may be well to give a few definitions of some technical terms that we may have to use. In an article in the *Atlantic Monthly* for May, the various units of measure employed by electricians have been lucidly defined by T. C. Mendenhall. We have extracted from this article the definitions here given, and desire to acknowledge our indebtedness for the same.

The ohm, the ampère and the volt are the three fundamental units of electrical measurement. The ohm is the unit of resistance. G. S. Ohm was born in Bavaria in 1781, and in 1827 published a pamphlet, containing what has since been universally known as "Ohm's Law." Ohm found "that in any circuit through which an electric current was made to pass, the strength of the current—that is, the quantity of electricity passing a given section of a conductor in one second of time—was directly proportional to the electromotive force (often called the 'electrical pressure'), and inversely proportional to its resistance."

The ampère is the unit of current. The third unit, which is mathematically the product of these two, is the electromotive force in the circuit, and its unit of measure is the volt. These three fundamental units are related to one another through Ohm's law, and the following example will illustrate this relation. For this purpose, perhaps, nothing is better than the comparison of the flow of a current of electricity in a conductor to the flow of a stream of water through a pipe. When water flows from a reservoir through a pipe, the quantity which passes any point in the pipe in one second (current strength) depends on the height of the reservoir above the outlet, that is, on the "head," or pressure under which it flows, and also on the resistance which the pipe offers to its motion. The greater the pressure, the greater the flow; and the greater the resistance, the less the flow. The flow or strength of the current is, therefore,

directly proportional to the pressure, and inversely proportional to the resistance. If in this statement "electromotive force" be substituted for pressure, it becomes Ohm's law. When these elements are measured in the units given above, the electromotive force in volts, the resistance in ohms, and the current in ampères, the law is expressed very simply by saying that the "current is equal to the electromotive force divided by the resistance." Thus, if the electromotive force be 1 volt, and the resistance of the circuit be 1 ohm, the current will be 1 ampère. In an ordinary incandescent electric lamp the electromotive force may be about 110 volts, the resistance of the carbon filament, when

hot, about 175 ohms, and the current must, therefore, be about $\frac{6}{10}$ of an ampère. With this explanation of the few terms used in expressing the amount of current used, we may proceed to describe the lamp.

The electric arc lamp is an apparatus by means of which the electric current is passed through two carbon rods that are adjusted in close proximity to one another, about $\frac{1}{8}$ to $\frac{1}{4}$ inch apart. The current, in passing through the air from one carbon to the other, causes the points of the carbon to become extremely hot, and to emit an intensely white light, this proceeding especially from the upper or positive



ELECTRIC LIGHT PHOTO.

carbon. This intense heat, of course, burns away the carbon points, and it is the object of the mechanism of the lamp to keep the carbons adjusted, so that the distance between them remains constant despite this burning away.

In order to start the light it is necessary to bring the two carbons in contact for a moment, in order to start the flow of electricity from the one to the other. Upon separation of the carbons, the light will be emitted. The arc lamp we have used has two carbon-holders, with screws for clamping the carbons in place. To operate it, first separate the carbon holders as far as is pos-

sible by turning the screw on the side of the lamp. In the lower carbon-holder insert about 4 inches of carbon, and in the upper one a long carbon, and clamp so that these two sticks of carbon do not quite touch one another. In order to obtain the best results the upper or positive carbon should be set so that its axis or central line is about $\frac{1}{8}$ inch behind that of the lower carbon. The lamp is now ready to be connected with the electric mains. Take one of the main wires and insert it in one of the binding posts of the lamp. Then with a wire connect the other binding post of the lamp to one of the posts on the rheostat or resistance box, which latter regulates the amount of current, or ampères, and therefore the amount of light produced by the lamp. The



ELECTRIC LIGHT PHOTO (BY STAUFFER).

second binding post of the resistance box is connected with the other wire from the mains. Now turn on the switch admitting the current. A faint ticking will be heard in the lamp, caused by the current releasing the mechanism which slowly brings the carbons together until they touch, when the electro-magnet on the lower carbon-holder will draw down the latter, thus separating the carbons and immediately producing the light. If the ticking inside the lamp continues after the arc is started, the carbons coming closer together than $\frac{1}{8}$ inch,

the small thumbscrew at the back of the lamp should be turned to the right (screwed up) until the sound ceases. By means of this screw the distance between the carbons may be readily regulated.

After the carbons have been burning for a minute or so it will be noticed that one of the carbon points is much brighter than the other. This brighter carbon is the positive one and should be on top. If it is below, the current should be turned off, and the wires on the lamp interchanged. The brilliancy of the arc light is approximately 2,000 candle-power for 10 ampères of current, or 5 ampères give about 1,000 candle-power.

The Anthony electric arc lamp, the general details of which we have given above, possesses many points of advantage not found in other arc lamps.

1. The extreme sensitiveness of the regulating mechanism, combined with the general construction, causes the light to be as steady and uniform as the calcium light, though, of course, much more powerful.

2. The lamp, having a positive mechanical feed for the carbons, is independent of the position in which it is placed. All other lamps depend on gravity for their operation.

3. It is the smallest and lightest lamp made, so that it can be adapted to any purpose and applied to any apparatus.

4. The brilliancy of the light can be varied at will, without changing the lamp.

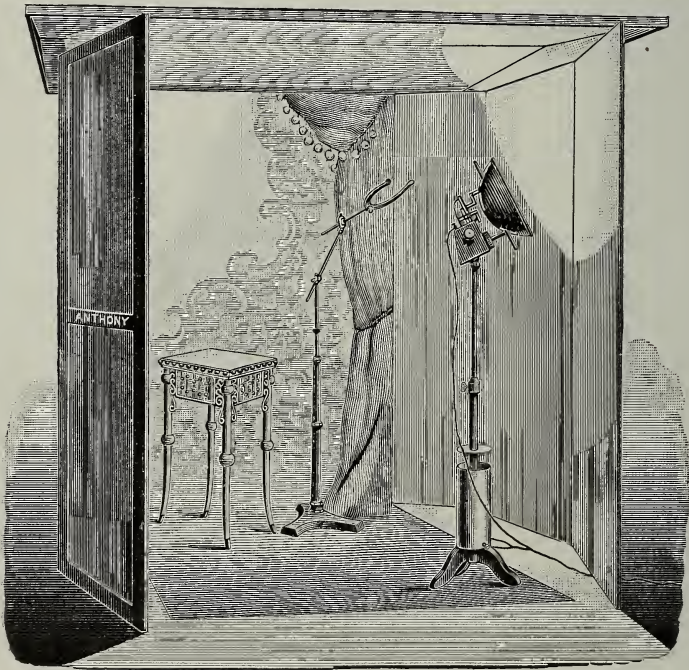
5. It can be used on any circuit, incandescent, arc or alternating. Direct currents from a voltage of 30 to over 500. For the alternating current the mechanism differs from that used with the direct current, but the dimensions of the lamp remain the same.

6. The carbons are so adjusted that the greatest possible amount of light is thrown upon the object to be illuminated, with the smallest expenditure of current.

The figure shows the method of using the lamp as employed in the making of the illustration which serve as frontispiece to this issue of the *BULLETIN*. We have an eight-sided room, the back being formed by the background carrier, the front being open to admit of running the camera stand back to any desired distance. The other six sides are fixtures, and consist of six screen doors, joined together in threes by loose hinges, so that they may readily be taken apart. These door-frames, 8 feet high and 45 inches wide, may be purchased in parts for \$1.50 each, and are easily put together with a screw-driver. The framework is covered with muslin, this being wetted and stretched before being tacked on. This muslin forms a backing upon which any colored material can easily be pinned. Three screens hinged together will stand without any braces. The whole chamber is covered in by a white roof, made by tacking wet muslin upon a light wooden frame. It will be seen that this chamber is easily made, costs but little, and may be stored, when not in use, in a very small space. The sides and roof may easily be covered with material of various colors to reflect or absorb the light, as desired. In the case of the illustrations here shown, the sides nearest the lamp were covered with a light pink paper, the roof left white, and the sides remote from the lamp covered with a brown woolen curtain. Repeated experiment has shown pink to be the best color for the reflecting surface. The lamp was placed so that the carbons were about 3 feet from the sides, and set in such a position that part of the light was reflected from the two sides nearest the camera and part from the roof.

It will be noted that no direct light from the lamp reaches the sitter, but that a portion of one side of the chamber is made to serve the same purpose as a skylight. Indeed, the whole treatment is the same as with the skylight, and reflecting, filtering, and absorbing screens are used the same as with daylight.

With this arrangement and with the lamp above described, bust portraits and full-length figures may be made in two to three seconds. The cost of running the lamp is less than 1 cent for each exposure, this including the time necessary for posing and focusing. The group of eight figures here shown was made on 8 x 10 Record plate, with a 3 B Dallmeyer lens, the subjects all sitting on a Besaw grouper. Three minutes were spent in arranging the group, and an exposure of four seconds was given.



For ferrotypes the light may be directed full on the sitter, two muslin screens being placed between the light and the subject, so as to soften down the light, easing the eyes and preventing harsh lighting.

Not only is such a lamp of the greatest value for portraiture, it can, on dull days, be used to advantage for printing. Some thirty frames may be set up on a stand and exposed to the light ; using American "Aristo" paper, prints ready for toning were made in fifteen minutes.

The lamp we have described, together with its appurtenances, may be seen in full operation at the store of our publishers. The price of the lamp is \$125. We believe that the time is not far distant when such an arrangement will be an indispensable part of a professional's outfit. There is a vast proportion of our population who, not being able to afford the time during the day, would gladly avail themselves of the opportunity to visit the photographer after business hours.

ITEMS OF INTEREST.

THE photography of snowflakes has recently engaged the attention of Mr. Sigson, who has made an excellent series of pictures after the following manner: A Zeiss microscope, fitted to a long camera, was placed at a considerable angle in the attic of a house, near to the window. To gather the flakes separately, a thick cloth was laid in that part of the window where but few flakes fell. After selecting a flake by the aid of a microscope, it was placed in a net made by gumming cotton thread across a hole cut in a card, this card being placed in position under the microscope. The lighting should be from the side, and should be arranged beforehand, so that half of the field is lighted. With a magnification of fifteen times, an exposure of two to five seconds was found necessary. To prevent the snowflake being melted by the breath of the operator, breathing must be carried on through a curved tube.

IN *l'Amateur Photographe*, P. Bruneau de Laborie gives the following formula for a fixing bath, for which latter he claims quicker and cleaner action than can be obtained with hypo alone:

Bisulphite of soda.....	100 grams.
Hyposulphite of soda.....	150 "
Water.....	1,000 c.c.

At the London Camera Club Conference Mr. Yeames, talking on the influence of photography on art, said: "In the work of artists of former days there were glaring disproportions between the human figure and animals, furniture and architecture, but those defects could easily be detected by photography, and could be easily avoided by the use of it, and it was impossible to deny that the stricter adherence to truth could fail in giving greater completeness and force to painters' work. But, however obvious it might be that the artist should use those means to perfect his work, he risked a danger, as, fascinated by the excellence and charm of photography, he might drift into realism, that intensely faithful rendering of the outward aspect of things. Attempts to arrive at a level with photography in detail were attended by a neglect and loss of the ideal or emotional, without which no picture could be raised out of the common, or deserved being classed among high art works."

"WHERE the artist was much under the influence of photography an absence of color prevailed in his work, this probably being due to his eyes being constantly kept on a colorless photo, and he did not detect the deficiency; or that, fascinated by the value of tones in the photo, he spent his energies in obtaining those at the expense of color. But he must remember that fine color, more than form, proportion, or tone values, gave life to a picture, and affected the sensitive feelings of the spectator, irresistibly drawing him to it, spreading a poetical film over the work."

"THERE was another and more direct use which had been adopted by even most skillful painters, that of having the landscape, or figures, or portrait taken from Nature by the camera, reproduced by chemical means on to the canvas, and painted over by the artist. However carefully the painter might try to

conceal the under work of photography, it somehow revealed itself. The photographer, not satisfied with the wonderful achievements of the camera pure and simple, had always sought to add to its great qualities the artistic element, and as long as this was done with judgment, without impairing the characteristics of photography, it seemed to him both advisable and legitimate."

"LIKE the painter, the photographer should choose his subject, and also the point of view he takes it from; if he had feeling for composition—or, in other words, for an agreeable flow of lines—he would select the view where he obtains those. In always choosing the best, he will be practicing an essential qualification of the artist, and thereby give more interest and attraction to his photographs. Like the artist he must also watch his subject, and see under what effects of light and shade it assumed its best and most striking aspect."

It must be borne in mind that the platino-bromide paper advertised contains no platinum salts, but is practically the same as argentic paper, being described as a new argentic bromide paper. Our publishers handle a platinum paper of the highest quality and will furnish details regarding it on application.

WRITING in *Eder's Jahrbuch* on the permanency of the latent or undeveloped image, C. H. Bothamley says that if soluble constituents are, as far as possible, washed out of the emulsion, the latent image is as lasting as the film itself. In the early days of dry plates there were recorded many cases where the undeveloped image faded out when the plate was kept for a long time after exposure and before development. He, himself, had recently developed a number of plates which were exposed three years previously, and had found that, as far as the intensity of the image was concerned, the negatives were practically the same as if they had been developed shortly after exposure. Some plates having thick films, however, showed that the image had partly disappeared in certain places, and a more careful study of the matter led to the conclusion that this partial disappearance of the image was confined to such parts of the film as were last to dry, to which places any soluble constituents of the film naturally tended by capillary action. Thus the view that disappearance of the latent image is due to saline impurities in the film received a notable confirmation.

WORK will soon be commenced on the seventh volume of the "International Annual," and from present indications the success of volume six will be more than duplicated. This latter, by the way, was eulogized in every photographic journal in the world. "Its get-up is perfect" was their general verdict, and the public testified to its excellence by making a second edition necessary.

CHLORINE water decomposes so readily that the commercial article is generally of poor quality. Sealed glass-tubes containing 5 grains of liquid chlorine are now to be had in commerce. With one of these it is possible to prepare 1 kilo. of chlorine water.

To make a small cupel in which to melt silver under the blowpipe, grind some bone-ash in a mortar. Shake up a little potassium carbonate with water, and add it drop by drop to the bone-ash, under constant stirring, until the ash



NEGATIVE BY ED. WILSON, SAVANNAH, GA.

THEATRICAL WORK WITH WILLIAMS' FLASH LIGHT MACHINE.

feels wet. Then place the mass in a matchbox, well compressing, and hollowing out the middle by building up the sides. Dry by gentle heat.

Zinc that contains arsenic and antimony may be freed from these by dropping the metal in small pieces into a crucible containing a mixture of melted sodium carbonate and potassium carbonate. The zinc melts and falls to the bottom of the crucible. When sufficient zinc has been added, add a little potassium nitrate. Allow to cool, and well wash the zinc in hot water.

To cement brass, or any other metal, upon glass, take 1 part of caustic soda, 3 parts of resin, and 5 parts of water, and rub up well with plaster of Paris equal in weight to half that of the above mixture.

FROM an editorial on "Colorless Developing Solutions" in the *British Journal of Photography*, we extract the following: "Before dissolving the pyro, the solution of sulphite of soda should invariably be rendered slightly acid. Almost any acid may be employed, and in quantity sufficient to neutralize any free alkali present, and liberate a faint trace of sulphurous acid by decomposition of the sulphite. When the solution smells very faintly of sulphurous acid, the right point has been reached. If such an acidified solution be poured on the dry pyro, and the whole gently stirred until it is dissolved, the resulting solution will be as nearly colorless as it is possible to obtain it; and if carefully preserved in a well-closed bottle, it will remain in that condition for a practically unlimited period. We have used pyro solution thus preserved, which has remained almost colorless for a period of over four years; whereas the solution preserved with nitric acid will often turn completely black in a week."

"It cannot, of course, be expected that the stock solution of pyro, in constant daily use, will retain its original freedom from color as well as that kept corked, since every time the bottle is opened its contents are brought into contact with the atmosphere, and, of course, subjected to more or less oxidizing influences. It is desirable, therefore, to keep a small bottle of solution for daily use, filling it from the larger stock as often as may be necessary. It should, in fact, be borne in mind, that every time the bottle is even shaken, it has a tendency to promote the discoloration of the contents."

If you contemplate buying a tripod camera, do not be persuaded into purchasing one fitted with a lot of complicated movements. Reversible back, rising front and swing back are all the movements necessary.

FROM the *Passaic Daily News* we cull the following:

"Colonel V. M. Wilcox had a large audience at his lecture on 'Personal Recollections of the War' in the Dundee Presbyterian Church last night. In it were many politicians and office-holders who had never seen the Dundee Church before. General Spencer presided. With him on the pulpit platform was Dr. P. F. Leavens. The lecture was only the chief feature of the evening's entertainment. Professor Homer A. Wilcox presided at the church organ and was assisted in rendering an excellent musical programme by Miss Fannie L. Wilcox, Mr. and Mrs. Lutz and Mr. John Strayer. The vocal selections included

'My Country, 'Tis of Thee,' and 'The Star-Spangled Banner.' General Spencer introduced Colonel Wilcox with a neat and very complimentary speech. The Colonel, though dressed as a civilian, looked every inch a soldier. His recollections of the war proved very entertaining, and he narrated them pleasantly and eloquently. Colonel Wilcox's son, a boy of eleven years, recited 'Barbara Fritschie' in a most captivating manner. 'He did it like a little man,' was the comment on all sides.

"A number of stereopticon views were shown after the lecture. They represented scenes and incidents referred to in Colonel Wilcox's lecture.

"Dr. Leavens and everybody else expressed themselves as well pleased with the entertainment. The proceeds will be large and will be highly appreciated by the struggling congregation."

Do not use gelatine hardeners this warm weather. Use a collodion paper and get better results. The successful photographer is the up-to-date one.

WE have received from Mr. John Carbutt his catalogue and reduced price list. Carbutt's plates are known the world over, and in the catalogue before us the general properties of each brand are clearly and succinctly set forth. A copy of the catalogue may be had by sending postal giving address. Our publishers carry a full line of these plates for sale to the trade and to the consumer.

BURCHETT's color screens, to which we drew attention in the March issue of BULLETIN, have been put on the market by Dallmeyer, and may be obtained through our publishers. In the circular issued, the object of the screens is stated as follows: "To give to photographic reproductions of Nature or paintings a truer monochromatic translation of the visual impressions, using either ordinary or isochromatic plates, the latter, however, being recommended in order to obtain the finest results; to produce natural skies in conjunction with landscapes on the same negative, and to avoid halation when photographing directly against the sun. Lenses of any makers can be fitted, the exposure being increased about six times only. In their principal form the screens are composed of a particular shade of optically worked green glass, combined with a particular shade of amber. They are placed (fitted in a setting so as to be removable at will) in the case of a doublet lens on either side of the diaphragm slot, and in single lenses either before or behind the same. For this purpose it is imperative that the lens itself, or the lens mount with the diaphragm, be sent. Measurements will not suffice.

PRACTICAL DEMONSTRATIONS.—The St. Louis Convention will be well worth visiting, if only for the practical demonstrations that will be given thereat. The most recent advances in the use of artificial light for portraiture will be shown. The motto will bear repetition—DON'T MISS THE ST. LOUIS CONVENTION.

THE easiest working and certainly one of the most effective exposure timers that we have seen is the little instrument known as Wynne's infallible exposure meter. In appearance it is like a watch. There is only one movement necessary, and in our hands it has proved to be remarkably accurate. The price is \$2.50.

NAMES AND TITLES OF PICTURES.

BY REV. F. C. LAMBERT, M.A.

It is often asked or quoted, "How can it matter what you call your picture?" "What's in a name?"—apparently quite a simple question, but not one easy to answer at all fully or satisfactorily. I think we may, however, get a contribution towards an answer by considering a somewhat similar case, viz., the title and contents of a book.

Who of us, at some time or other, has not been attracted to a book and led to read it, having first had our attention caught by some peculiarity in its title which at the moment struck a sympathetic chord in our heart! For instance, at the time of some great sorrow or bereavement should we not probably be tempted to look at a book or a poem with some such title as the following: "Light after Darkness" or "A Gleam in Sorrow's Cloud?" Or, again, a quotation from a favorite poem would make us linger and wish to know more, to compare the author's impressions with our own—past memories would be revived—a forgotten chain of circumstances recalled. I think we may fairly say that, in some such way, the name and title of a picture should seek to strike a keynote in the mind of the spectator, so that it will, as it were, turn his thought in the desired direction. At the same time the title of a book is not equivalent to a table of contents. Nor should the title of a picture say too much. If that be the case, then by the time we have grasped the title our interest begins to flag. We seem, as it were, to know all about the picture before we look at it. Obviously, then, there must be left some margin for the working of the imagination which more properly belongs to the picture itself.

Thus it is often a somewhat delicate matter to determine how much to say, what to suggest, and what to leave unsaid. It is certainly not over-stating the matter, not only in the case of books, but pictures also, that many a moderately good work has been saved from being swamped in the vast ocean of mediocrity by some happily chosen title. Similarly, many good works are passed over unobserved, unrecognized, because they are either inappropriately named, or not named at all. One other fault also causes many pictures to fail in receiving the attention due to them, viz., the choice and use of meaningless or pointless, or what is perhaps even worse, viz., thoroughly worn-out, threadbare titles. Take up the catalogue of the last exhibition you visited and you may find therein half a dozen "Sunsets," "Hay Fields," "Card Players," etc., while as to the idea-less people who take refuge in "Studies," "Effects" and "Landscapes" you will not have patience enough (I hope) to count them.

A recent attempt has been made to deride the idea of giving titles to photographs. I do not know, nor can I satisfactorily conjecture, on what grounds. But I do know that, for my own part, the result is generally unsatisfactory. Perhaps in the case of portraits of very well-known people there may be no need of a name; but in most other cases a well-chosen title would be a decided help.

The question now arises, how may the choice of good and appropriate titles be made? I may at once confess that I can offer no universal formula. Nor would such be desirable. So much must depend upon the taste and culture of the worker. It would not be over-stating the matter to say that we may very fairly estimate the refinement and nicety of taste of the artist by the appropriate-

ness and delicacy of the title ; because the choice is in some measure an indication of the stores of his mind. There is no better pabulum for feeding the mind in this way than a thoughtful reading of our best Nature poets. I would especially commend Longfellow, Wordsworth and Tennyson. The former of these three truly says :

“ And the Poet, faithful and far-seeing,
Sees, alike in stars and flowers, a part
Of the self-same universal being
Which is throbbing in his brain and heart.”—1.

Living in these high-pressure times, when speed and quantity seem to set the standards in almost everything, many—nay most—of us are apt to go through the world with our eyes practically closed to, oblivious of, much of its widespread beauty. Peter Bell is father of a large family.

“ A primrose by a river’s brim
A yellow primrose was to him
And it was nothing more.

The soft blue sky did never melt
Into his heart ; he never felt
The witchery of the soft blue sky !”—2.

Who of us has not thought that were photographers more content to seek their pictures in simpler subjects, much of the over-crowded, forced, artificial effects of many of their attempts at picture-making would have been spared us ? In the hunt for something startling, sensational, and “ big,” we all often pass by the “ primrose by the river’s brim,” the subject of real and tender beauty quite close to our homes, and go far afield to find—nothing. Was it Goethe or Gounod who said something to the effect that * * * artists are men to whom God has given greater visual power whereby they see more of the infinite than other men ?

When we want legal knowledge, we call in the law expert, the lawyer. Similarly for medical and surgical matters, we seek the physician and lawyer. Is it not consistent that for the poetic side, *i. e.*, the inner beauty of Nature, we must consult the beauty students, the poets ? By their special gifts they see at a glance what ordinary folks (like the “ present writer ” and the “ gentle reader ”) can only see after much looking.

“ All day and all night it* is ever drawn
From the brain of the purple mountain
Which stands in the distance yonder :
It springs on a level of bowery lawn,
And the mountain draws it from heaven above,
And it sings a song of undying love ;
And yet tho’ its voice be so clear and full,
You never would hear it—your ears are so dull.”—3.

Is it not for some such reason as this that all true, real and great art, no matter in what form—sculpture, poetry, painting, music, drama, etc.—is undying, *i. e.*, belongs to no special time, because it belongs to all time. The “ one touch of Nature ” which makes all the world akin springs from the power of

* The Fountain. 1.—Longfellow, “ Flowers.” 2.—Wordsworth, “ Peter Bell.” 3.—Tennyson, “ Poet’s Mind.”

the artist being able to interpret ourselves to ourselves by means of his own insight.

"In common things that round us lie
Some random truths he can impart;
The harvest of a quiet eye,
That broods and sleeps on his own heart."—4.

The real life of great art, and therefore of great artists, is independent of time. Often enough their real life in the nation is only begun when their bones are crumbling to dust.

"*Emigravit* is the inscription on the tombstone where he lies;
Dead he is not—but departed—for the artist never dies."—5.

But what, says the "gentle reader," has this to do with names and titles of photographs?

The answer, briefly, is this: The writings of our poets constitute our best storehouse of poetic thought. They show us the deeper, the inner, side of Nature's beauties. They help, suggest, guide us, not only what to look for, but how to see these inner beauties. They stimulate us to try to discover for ourselves new beauties which lie just below the surface of things. Surely, then, is it not consistent that a man whose mind is stored with beautiful thoughts, and whose eyes are all *qui vive* to see beauty in simple things, will, as a matter of probability, as a matter of fact, be quicker to see, not only more, but also deeper, than one whose mind is more or less a blank in these directions.

Let there be no mistake. I am not advocating or approving of the man who collects "catchy lines" from the poets, and walks about, note book in hand, trying to find a picture that will fit his title. This is an inversion of common sense well calculated to stunt, if not extinguish, any little originality which the person may start with. We do not, as a rule, buy a picture frame and then try to find a picture that may be cut down to fit it. Let the man who honestly means to make the best use of the taste and abilities given him use any and every honest means to cultivate them. Let him read the poets, slowly, thoughtfully, jotting down whatever strikes his fancy or starts his imagination. Let him compare the poet's thoughts with his own, noting where they agree, where they differ. Wherever he sees, or thinks he sees, an unobserved, unrecorded feature, phase or aspect of Nature's many-sided face, by all means follow it up. A simple thought often has given rise to a great poetic creation. Now comes the question, how and when may the picture-maker make use of a quotation for a title to his picture. Surely the answer is, whenever the poet's words express his (the picture-maker's) thoughts and aims more closely and exactly than any words of his own. When we photographers attempt to make illustrations of any poem as a whole, we seldom satisfy either ourselves or any one else. So soon as our first illustration is seen, up springs Jack Noall, inflated with the desire to point out "that the man ought to have had on a different kind of hat, been close shaved, held a sword," etc., to fulfill the conditions of certain points expressed or conjectured somewhere in the poem.

I am persuaded, for the present, that it is a mistake for one person to attempt to set forth what is in another man's mind, unless by special request and collaboration. It is, however, quite free and healthy for any of us to put forth what we regard as our view of such mental picture. The poet's words act like a key,

and for the time show us a certain mental picture—a spark to fire the imagination.

By way of illustration, let us cull from one of our great Nature poets here and there a line. Take Longfellow's "April Day." As we read the words—

"Dark and many-folded clouds foretell
The coming on of storms."—6.

does not each one of us recall some scene when these words seem to express our feeling of the "many-folded clouds"? Or, again, here is another such passage :

"When the bright sunset fills
The silver woods with light, the green slope throws
Its shadows in the hollows of the hills,
And wide the upland glows."—6.

where we have put into words better than our own an effect which every careful, observant photographer must have not only seen and admired, but tried again and again to catch, viz., those "shadows in the hollows of the hills." Yet once again :

"Inverted in the tide
Stand the gray rocks and trembling shadows throw."—6.

How happily those words, "trembling shadows," express the very essence of the scene. Jack Noall says : "Of course, they are not shadows at all, but only reflections, and do not tremble, but only appear to move." Still, right or wrong in science, no words of ours can more happily express our impressions and our sentiment.

(*To be continued.*)

SLOW DEVELOPMENT.

BY W. J. HICKMOTT.

THE advantage of slow development, at least for the beginner in photography, does not seem to be fully appreciated. My observation leads me to believe that the tyro invariably over-exposes landscapes and greatly under-exposes interiors, and undertakes to develop both with a developer of the same strength. The result is that the former lacks strength and good printing quality, while the latter is hard and chalky, and gives a worthless print. If the beginner would only endeavor to reverse the operation, under-expose the landscapes and over-expose the interiors, a greater measure of success would attend his efforts.

It is seldom that either a landscape or an interior can be developed with a normal developer, unless the exposure has been made by some one who has had long and varied experience. A good and pretty sure way for the development of a landscape negative is to take the normal quantity of pyro and, say, one-fourth of the normal quantity of accelerator. For instance, if the formula calls for 1 dram of pyro and 1 dram of accelerator and 2 ounces of water, take 1 dram of pyro, 2 ounces of water and $\frac{1}{4}$ dram of accelerator, and flow it over the plate. If the image begins to appear in, say, two minutes, and builds up rapidly and

steadily, no change need be made in the developer. If there is an apparent lack of detail anywhere, add $\frac{1}{4}$ of a dram more of accelerator, and this will usually be sufficient, unless the plate has had nearly the correct exposure. Just at the last it may be well to flow the plate with a normal developer for a moment or two, just to finish it off, and when a negative, developed in this way, comes from the fixing bath, it will be found to be bright and sparkling, full of vigor, and a good printer. It is a great advantage to fix the negative in an acid fixing bath, especially if the development has been prolonged, as thereby all stains are removed, and, if the development has been carried far enough, a beautiful blue-black negative will result, a delight to the eye, and a pleasure to print from. Development should be carried a little further, if the plate is fixed in an acid fixing bath, than if fixed in plain pyro, for the reason that there is always a slight yellow stain left by the plain bath, and this stain affects the printing quality of the negative, making it print slower and with more contrast. The acid fixing bath removes this stain, and the negative will print quicker than one fixed in the plain bath. It is for this reason that the development should be carried somewhat further.

Interiors should be over-exposed, if possible, and then development with a normal developer can be attempted. Usually, however, the plate is under-exposed, and then you will need to reverse the above operation in mixing the developer. Take, say, 1 dram of accelerator, 2 ounces of water, and $\frac{1}{4}$ dram of pyro. If the image does not start in, say, two minutes, add 2 ounces more of water and $\frac{1}{2}$ a dram of accelerator. If this does not start the image, add $\frac{1}{2}$ a dram more of accelerator, and if it still hangs back throw the plate away. It will be so hopelessly under-exposed that it will be a waste of time to bother with it, and you would better go and make another exposure. The aim in an interior should be to get a fine, soft negative, full of detail. There will always be shadows enough that cannot be avoided to give plenty of relief, no matter how long the exposure. There should be no such strong high lights in it for the best effects as you aim to get in a landscape. I do not mean to say that it should be flat and without contrast, but the trouble will usually be to avoid strong contrasts. A hard, under-timed interior is worse than nothing, while the same interior, fully timed and rightly developed, will be a thing of beauty.

When you set up your camera for making an interior, do not stay by it and count the minutes. Arrange your room just as you want it, place the camera, obtain a good focus, insert a medium stop, say, $f/32$, uncap the lens and go away and let the camera do the work alone. If you stay beside it, the tendency will be to shut it off long before it is done. If you go away from it, and go about something else, you will be helping by just so much. Set the time before you uncap the lens, and then don't go near the camera until the time is up, whether it is one hour or three. If you make up your mind to give an exposure of an hour and get so busily engaged over something else that you forget and don't get around for an hour and a half, it will usually be all right. The chances are that it will be much better than it would have been had you capped the lens when the time was exactly up. When you begin to develop, if the plate looks as though it was over-exposed, don't get excited and add pyro and bromide in great quantities. Let it alone. You will probably soon find that there are some dark corners that are not over-exposed, and by the time they are out you will have density enough all over the plate to make a first-class print. Interiors are not as easy to make as landscapes, and they are not as easy to develop, but

they are good educators, and should not be neglected just because they are hard to make. Most of the difficulty lies in the exposure. If that is ample, everything else goes on fairly well.

THE DIFFERENCE IN PROCESSES OF FILM-MAKING.

THE following interesting letter we take from *The British Journal of Photography*. It gives details of the method of making rollable films that will be appreciated by all users of this material.

"In a recent paper read before members of the Tunbridge Wells Amateur Photographic Association and published in the photographic press, the author reasons as follows :

" 'These various makes* may be divided into 'rollable' and 'cut sheet,' and without going into details as to the various substances used in their manufacture, he might mention that in the case of the former a very thin film of the composition in a fluid state is spread on glass, and, as soon as dry, is coated with the emulsion. With the cut sheet a solid block of material is produced, and slices of the requisite thickness are cut from it by mechanical means. As there is some little uncertainty as to the action of the various constituents of the celluloid support on the sensitive emulsion, and more particularly that of the camphor used, some advantage is gained for the cut film. By this method a certain amount of time is allowed to elapse, probably some months, before coating, for all volatile properties to evaporate ; whereas the rollable film, on account of its delicate nature, has to be coated before removal from the glass.'

"The argument used by the author, as far as he goes, is quite correct, and must in practice prove so ; but, as it would be inferred by the language used that all rollable film is made by this process, I feel, in justice to the companies bearing my name and the public as well, 'the difference' should be pointed out, as the knowledge of the principle of this process, in which the defects are so apparent, has helped to spread the belief that rollable film cannot be made of as good quality or as good keeping qualities as cut sheet film. The fact that patent protection for the process by which Blair's film is made has only recently been fully granted in European countries has, until the present, prevented this process being described and the great difference shown.

"Without going into the disadvantages which are not apparent in the process described, I will endeavor to explain the principle of the process employed in making 'Blair's Film.'

"It will be easily seen, even to those acquainted practically with the principle of drying or seasoning any material, that the extraction of moisture or liquid (which is drying—and seasoning is only drying prolonged) is accomplished by air absorbing this moisture.

"The condition of the air, *i. e.*, its ability to absorb moisture by being dry, as it is brought in contact with the material, and the frequency with which a fresh supply is brought into this contact, governs the drying or seasoning. In the manufacture of film, one of the important qualities is that it should be flat, or at least as nearly so as possible ; it is, therefore, most essential that the base or support which takes the place of glass, be exposed on both sides during the entire process of drying. If allowed to dry more on one side than another,

* Referring to film.

curling will result, while, if wound or packed before being fully seasoned, the edges exposed will dry and of course contract, leaving a 'bagginess' to the central part, which, when once formed, it is quite impossible to remove. The sheets from which a large amount of the 'cut sheet film' are made have the advantages set forth, as the sheets are sliced from the block of celluloid while quite 'green' and the drying carried forward by both surfaces being exposed to contact with the air.

"The process used in making 'Blair's Film' can be briefly outlined as follows: The base, or the basic film taking the place of glass, is formed by spreading the liquid material on an endless moving surface—for instance, a cylinder—and allowing this material, which is formed into the basic film, to remain on this surface only sufficient time to become solid enough to be handled by the machinery without injury, then stripped and kept in motion over rollers, thus allowing the air to be passed over both surfaces equally until sufficiently seasoned, then carried to the coating machine in the non-actinic department, where the sensitive emulsion is applied, and the completed film is arranged on the devices which still expose both sides of the film until the drying of the sensitive emulsion is completed.

"Thus it will be seen that, from the time the basic film leaves the moving surface until the completed sensitive film is finally cut into proper widths and lengths, and wound or put in cut sheet packages, the air has constant access to both sides, and the time of seasoning the basic film before coating can be prolonged to any extent desirable by extending the area over which it travels, while, as this process is carried on in compartments used for no other purposes, the temperature within them can be kept at any desired degree of heat, and the air changed by propellers as often as necessary.

"It is surprising the great difference actual tests have shown in the time required to season by this method, compared with that of drying where no direct current can be brought in contact with the surfaces, even in a well-ventilated room. When the film is hermetically in contact with a non-conductor of heat and air, the difference in time is added to many fold. It will be seen that by this process basic film could be made of any length (even miles), and that the relation of the two processes is similar to that of forming fabrics in frames and that of weaving by modern looms. The ground-glass surface of Blair's film is not produced by sand blasting the basic film itself, as is generally supposed (which would be not only an expensive, but dusty and dangerous process), but by giving the traveling surface on which the film is formed a fine grain surface, which is reproduced on the film, and, once prepared, goes on giving the impression to miles of film without additional cost, labor or dirt. As to the keeping qualities of film properly made, and with all damaging properties removed from the base, compared with glass plates, everything seems in favor of film, as the chief destroyer of the sensitive coating of emulsion is air—moist air, impure air.

"With plates, the non-flexibility of the support makes it unsafe to pack the surfaces together, and even when so packed the air is not kept from the surface, while even with cut sheet films it is almost entirely so, the flexibility of the support causing the sheets to be in quite perfect contact. With film in rolls the surfaces are practically hermetically sealed from the air, and a roll of film as wound by the manufacturers, with box and wrapping removed, could be exposed to daylight without its affecting the sensitive surface at the ends of the roll, while

but a few wraps of the roll would be found affected by the exposure. The advantages in weight, non-halation and freedom from breakage, need not, I feel, be argued. Many faulty batches of film have been made, but have they (even comparatively and by the imperfect method) been as numerous as dry plates, or any other of the new processes which have revolutionized the method of making photographs in their early stages? Film photography will be found interesting to watch in its onward march.

I am, yours, etc.,

“T. H. BLAIR.”

“THE EUROPEAN BLAIR COMPANY,

“Southampton Street, Holborn.”

OUR MAY ILLUSTRATION.

MR. FRANK A. PLACE has furnished us with further details regarding the flash-light picture, “Juvenile Gamblers,” used as frontispiece in the May issue of the BULLETIN. The original picture was made on a 16 x 20 Cramer plate with the Williams flash machine, 1 ounce of blitz-pulver being used. Mr. Place says : “to have obtained like results with the same stop and daylight, an exposure of one minute would have been necessary.” Accompanying his letter Mr. Place



sends a picture, here reproduced in half-tone, of himself and wife “on the way to join Coxey’s army.” It is a clever piece of work. The landscape, or rail-roadscape, was painted on a card with india ink and the figures carefully cut from photographs and pasted in position on the card, the whole being then copied.

All communications for the July issue must reach us not later than June 30th.

CONVENTION COLUMN.

DON'T MISS THE ST. LOUIS CONVENTION.—It is going to be a tremendous success. The Executive Committee are hustlers, and are displaying an energy hitherto unknown to convention committees. Most photographers require a vacation, and where can it be better spent than at St. Louis during the Convention week? Every photographer of note will be there, every good fellow whom we have often longed to meet, and there will be an exhibition the like of which has never been seen in this country. The latest improvements in apparatus will be shown, and the getting together will be of the greatest value to photography and photographers.

LETTER FROM SECRETARY RÖSCH.—The present outlook for the Photographic Association of America is truly encouraging.

The Executive Board are not wholly absorbed in the success of the St. Louis Convention, but have given the future elevation of our Association much consideration and thought.

The present manifestations and the amount of mail passing through their hands prove beyond a doubt that their efforts have not been in vain. Every member of that body has done his duty thus far, and will continue to do so until the expiration of his time of office. If energy and push demonstrate progress (as it always does), the Association will hereafter prosper, and surely be indicative of what a national organization ought to be.

Come to St. Louis and be convinced.

Railroad rates will be made in all sections of the country for those who wish to attend the Convention.

The souvenir programme will reach you the latter part of June.

Don't be unwise, but join our national association, and be identified as one of its faithful workers.

If you have no large camera box, you can easily take home a diploma in Class D.

At a meeting of the St. Louis photographers, dealers and manufacturers, held May 4th, much enthusiasm was manifested in the direction of entertaining visiting members. Contributions to the extent of \$2,500 were made for that purpose.

The following local committee was appointed to make arrangements for the boat excursion and all necessary matters for the entertainment of the visitors.

J. C. Strauss, *Chairman*; J. C. Somerville, *Treasurer*; A. S. Robertson, *Secretary*; L. F. Hammer, F. Ernest Cramer, H. J. Armbruster, M. A. Seed, G. E. Brucker, George T. Bassett.

Don't hesitate, but write to me at once, and I will give you full information.

You still have sufficient time to make an exhibit, if you interest yourself without further delay.

The Executive Committee have now decided to award a diploma to every exhibitor whose rating is 25 per cent. or over in every class on the list.

DON'T MISS

THE

ST. LOUIS CONVENTION.

LANTERN WORK.

DURING the summer months the optical lantern is but seldom used. Other attractions abound, and it is recognized that, for very sufficient reasons, winter is the time for lantern slide exhibitions. But there is ample employment for the lantern-slide worker during the summer. The old set of slides have not a permanent interest, new material must be looked for, and a stock of fresh negatives laid in for future use. The hand camera, properly used, yields the class of subjects most popular with lantern-slide workers. True it is, that for serious work, the tripod and a strict examination of the image on the ground-glass are necessary; but at home entertainments the hand camera lantern slide always arouses the keenest interest. If it is possible, use the camera on the tripod, but the subjects most desired are those that do not permit of any waiting, and the camera and operator must be quick of action and precise in movement. Correct focusing and a level camera are essential, and both may be obtained by care and practice.

LANTERN slides which are instructive as well as interesting are readily made, and some of them may, with profit to all concerned, be introduced at every exhibition. In the *Optical Magic Lantern Journal* a method for showing magnetic curves is given. A horse-shoe magnet is placed upon a piece of black cloth and on the magnet is laid the lantern-slide plate, it being supported at the four corners by pieces of wood of the same thickness as the magnet. This, of course, is all done in the darkroom. Iron filings are now gently dusted over the plate, this latter being tapped to assist the movement of the filings. A hole about $4\frac{1}{2}$ inches square is cut in the lid of a cardboard box, and this is covered with a piece of ground-glass or tracing paper. This cover is placed over the lantern plate to give a more even illumination. Exposure is made by lighting a match and holding it over the ground-glass cover. After the exposure is made, the filings are dusted off and the plate is ready for development.

Dr. J. A. Scott's method of coloring lantern slides will be of interest to some of our readers. The gelatine surface is first wetted and drained, and, while thus damp, is in a very suitable condition for receiving aniline dyes. These are used in aqueous solution and laid on with a camel's-hair brush, the depth of tint depending on the strength of the solution and the length of time it remains on the gelatine surface. Eosin, tartrazin yellow, vesuvin and indigo-carmin are the most suitable dyes, as they can be mixed and compound colors formed without chemical decomposition.

IN our article on "Lantern Work" in the February number of the BULLETIN, read in the formula for development 2 ounces of water, instead of 8 ounces.

A NEW developer—Hyko—put up in two bottles, and sold by our publishers, will be found especially efficient for lantern slides and transparencies. It is a combination of hydroquinone and eikonogen.

IT takes a man with a good deal of influence with himself to do something he doesn't want to and doesn't have to, because he ought to.—*Puck*.

JOTTINGS FROM GERMANY.

In Honor of Steinheil.—A proposition by the chairman of the Deutsche Photographen Verein, Herr Carl Schwier, to erect a memorial tablet at the house of the late Dr. Adolf Steinheil, was accepted by the society. Herr F. Müller, of Munich, has been appointed to carry out the work, provided the family does not object.

Albumen Bromide of Silver Paper.—A highly sensitive developing paper is obtained if ordinary silvered albumen paper is put into the following bath for about five minutes :

Bichromate of potassium.....	8 grams.
Bromide of potassium.....	4 “
Water.....	300 c.c.

After washing from one to two hours the paper is dried, exposed to lamp-light from ten to twenty seconds, and developed, preferably with amidol.—*Photo Archiv.*

The First Photograph.—It has generally been accepted that the first photographic portrait ever made was Herschell's picture of Prof. Draper's daughter, which was exhibited as such in Chicago. But there is documentary evidence that the first photographic portraits were made a year before that time in Philadelphia by a tinsmith named Cornelius, who had to construct a camera for Dr. Goddard, and, embracing this opportunity, made a duplicate for his own use. He made a portrait of himself in November, 1839, by focusing on a chair, uncovering the lens, seating himself quickly, and exposing for five minutes. This picture was shown to the American Philosophical Society in December, 1839, and the minutes about this presentation are still preserved. The first photographic gallery was opened in Philadelphia in 1840, by Cornelius and Goddard, and pictures were made here quite a while before they were known professionally in Europe. America has, therefore, its share in the discovery of photography.—*Dr. Eder's Year Book.*

Tanning of Gelatine in Daylight.—Almost all the photo-mechanical processes, says the *Photo Archiv*, are based upon the fact that gelatine mixed with bichromate salts becomes insoluble on exposure to light. It is of interest to investigate if other substances influence gelatine in a similar manner. R. Ed. Liesegang has discovered the following facts: A mixture of permanganate of potassium and bromide of tin tans gelatine pretty powerfully on exposure to light. Ferric salts tan gelatine in the dark, and the tanning is suspended again by the reduction of the salt into ferrous salt. The only useful body which could replace successfully the bichromate of potassium is bromide of silver, whose peculiar tanning properties have already been investigated by others. It is also remarkable that albuminate of silver dissolves only in fixing soda, if produced in the dark. In the light it loses this property.

Boric Acid in Combined Baths.—Writing on this subject Otto Siebert says that sulphur toning may be avoided by the use of the boric acid toning and fixing bath, if the same is properly made. If a solution of hypo and boric acid in

water is made in such a manner that hypo and soda are dissolved separately and then mixed, the resulting mixture will not become cloudy after days of standing, nor even on boiling. But if the previously mixed salts are added to water and dissolved under constant shaking a yellow coloration, due to finely divided sulphur, will appear after a few minutes.

A New Book.—We can with confidence recommend to our German-speaking friends a new book, sent to us recently by W. Knapp of Halle a/S., Germany, entitled “*Photographisches Notiz und Nachschlagebuch für die Praxis*,” written by Lieut. Ludwig David and Charles Scolik. It contains valuable practical information and is well illustrated.

Stripping Negatives.—Herr Behrold recommends the following method for stripping the films from ordinary plates. The negative is first flowed with gelatine and then left to set. It is then laid for half an hour in a 5 per cent. solution of chrome alum. The edges of the film are then cut and the plate again laid in the chrome alum solution. In half an hour the film will leave the plate and will not show any expansion.

Local Reduction.—It is sometimes necessary to reduce, or even to remove, parts of the image on a bromide enlargement or in a negative. Most methods fail, either on account of lack of energy or from the disagreeable coloration imparted to the paper. Lainer recommends the following, by which dots, lines and larger surfaces may be totally reduced: A small quantity of potassium iodide is dissolved in water and a few crystals of iodine are added. These readily dissolve. The larger the proportion of iodine, the more rapid and energetic the action of the reducer. The parts of the dry bromide print or negative are treated with the iodine solution by means of a brush. Bleaching rapidly occurs, owing to the formation of iodide of silver, which dissolves in hypo. When working on a small scale, the hypo (1:4) may be put on with a brush; but if large parts, such as the sky, have been transformed into iodide of silver, the whole sheet should be immersed in the hypo. After the fixing, the print or negative is well washed with water. Alcoholic iodine solutions may be used, but the following aqueous solution is preferred: Potassium iodide, 2 grams, dissolved in 2 cubic centimeters of water; to this add iodine until a dark brown solution is obtained. The mixture is stable, and, according to requirement, may be diluted or mixed with glycerine, to prevent drying.

Victor Angerer.—By the death of Victor Angerer, on April 15th at Vienna, Austria lost one of its most prominent photographers. Few men have worked with his energy, and few have done more to advance photography and photo-engraving. His loss will be keenly felt by his many admirers.

Eder's Year Book for 1894.—Wilhelm Knapp, of Halle a/S., Germany, is probably the best known publisher of German photographic literature. In the Year Book both publisher and Dr. Eder have excelled all former efforts. In addition to many original articles by some of the most prominent photographers of the day, it gives a valuable review of the progress made in photography and photo-mechanical processes during the past two years. A number of excellent photo-mechanical prints embellish the work and make it one of the most attrac-

tive books published this year. We strongly recommend it to all our readers conversant with the German language.

Mending Cracked Negatives.—To make a cracked negative fit for use, Dr. Miethe recommends the following process: Place the broken negative, the film of which must be intact, film side down upon a metal plate which has been heated so that it can hardly be touched by the hand. The break is then covered with Canada balsam which readily melts and fills up the crack. To give the negative more stability, a large piece of the Canada balsam is put upon the center of the back of the negative, and a clean glass plate the same size as the negative is laid over all. The melted balsam spreads out evenly, the excess being squeezed out. After cooling, the plates are still further fastened around the edges with strips of Sheplie gum paper.

Writing Upon Glass.—Take 2 parts shellac, 1 part Venice turpentine, and dissolve them in the water bath in 3 parts of oil of turpentine. After complete solution, 1 part lampblack is added and the solution is well stirred.

COLORING PHOTOGRAPHS.

BY J. JOÉ.

ALL readers of photographic literature are cognizant of the attempts that have been made to produce pictures direct in natural colors. No matter how satisfied the experimenters may be with the results of their labors, the fact remains that, as yet, these results are not of practical value. If a colored photograph is wanted, the professional photographer must have recourse to brush and colors in order to imitate Nature.

In the coloring of photographs several improvements have recently been made, and we will endeavor to give some practical hints on the technical part of the process, leaving the artistic side to some other writer.

Prints are seldom made upon salted paper, but mostly on paper coated with some other material, which gives more detail and brilliancy, while increasing the difficulty of coloring. The smooth surfaces of the "Aristo" papers, for instance, will accept hardly any water-color, while the coating of gelatine emulsion papers is easily injured by moisture. These evils can only be removed by suitable preliminary treatment. The following method has proved to be of real practical value: Gelatine prints, which would suffer by moisture, are treated with alum after fixing. After being mounted and retouched with albumen colors, the picture is flowed with filtered albumen, to which a few drops of ammonia have been added. When fairly dry, it is passed through a burnisher. The albumen, if not previously completely coagulated, will now become sufficiently solid for use. This albumen coating admits of the use of all water-colors.

For "Aristo" and all collodion paper no preliminary preparation is required transparent colors, but when using water-colors it is necessary to give a coating for of varnish. The picture preserves its brilliancy, and the coloring matter may readily be applied.

In the coloring of photographs a distinction is made between covering and transparent colors. The former are the ordinary water-colors in tubes or cakes, while the transparent colors are liquid. By a careful combination of the

two, the most brilliant results are obtained. The colors are applied in such a manner that all the half-tones and details of the picture are covered with transparent colors, while the deep shadows are painted with a covering color to which some albumen may with advantage be added. In the category of covering colors we may list cobalt, prussian blue, cadmium yellow, yellow ochre, green earth, mars yellow, india red, umber, burnt sienna and Chinese white. The finely powdered colors are mixed with a suitable binding medium, preferably:

Filtered albumen.....	100 c. c.
Ammonium carbonate.....	5 grams.
Glycerine.....	3 c. c.
Liquid ammonia.....	4 "
Water.....	25 "

This mixture, if well cooked, will keep a long while and answers all requirements. The colors thus prepared adhere well, are sufficiently transparent, and may even be burnished. The transparent colors may be worked without considering light and shadow, these being sufficiently well marked in the print. The coloring of the flesh is sometimes rendered difficult because of the spotting which may be removed by the paint. The previous application of a little albumen is recommended. The background requires particular care. It should be well graded and should harmonize in color with the subject; greenish gray and medium gray colors may be used with advantage. The gold ground is also used quite frequently as background. This can be made quite easily by coating the background with thin mastic varnish, following the outline of the figure. When half dry, powder it uniformly with fine gold bronze. When the varnish has become thoroughly dried, remove with a brush the excess of gold bronze. Backgrounds with distinctive design should be painted in a subdued tone.

Albumen prints can also be treated with covering colors. It is only necessary to collodionize the colored picture. For this purpose use a 3 per cent. plain collodion. Such a picture can be burnished. Collodion prints do not require any such treatment; indeed, flowing with collodion would be injurious.

THE TREATMENT OF LENSES.

BY GASTON NIEWENGLOWSKI.

THE lens being one of the most important pieces of apparatus that the photographer has, too great care cannot be taken of it. I have often, in my travels, seen some of the fraternity treating their lenses in a very careless fashion, placing them unwrapped in a bag, or forcing into pockets where they risked being in harmful company. I have sometimes felt inclined to ask these careless lens-handlers to exchange prints with me, thinking it would be interesting to see work done under such conditions.

Solar light acts upon all kinds of glass; it imparts a slight coloring that has been studied by Faraday, Bontemps, Fresnel and others. It is, however, rarely noticed in optical glasses, but should it occur, so as to change the properties of the lens, the latter should be discarded.

The lens should be guarded from humidity, as moisture readily condenses on the glass, being attracted by the large proportion of alkalis used in the manu-

facture of the glass to impart transparency. The deterioration is greater in glass that has been exposed to the light for any length of time. This humidity, if allowed to remain on the glass for some time, will impart a misty appearance to it, destroying the polish, and hence the transparency. To obviate this, whenever the surfaces of the lenses become dimmed, it is well to carefully wipe them with a piece of soft chamois skin, such as a piece of a glove. If in spite of all precautions the deterioration takes place, the lens must be repolished by an optician. At times, though rarely, the glass crystallizes in some parts, devitrifies, becomes opaque, and takes on the appearance of porcelain. The action of acids, especially hydrofluoric, is injurious.

Heat or cold, causing an expansion or contraction of the mounting, may produce a displacement of the lenses and a slight deformity in the curvature. Fortunately this is not of general occurrence. To great a dryness might cause a cracking in the resinous matter which holds the glasses in optical contact, but accidents of this character only happen to lenses that lie idle for a considerable period. Lenses, therefore, should be stored in a place free from dampness and away from the heat.

During a trip care must be taken to avoid breaking the lenses, and also to avoid scratching them. The former rarely happens; when it does, it shows great negligence on the part of the operator. Scratching is often caused by over zeal in rubbing the lenses, to clean them. The rubbing of glass electrifies it, giving it the property of attracting particles of dust. Lenses should be cleaned, not rubbed; this must be done with suitable material. There is nothing better for this purpose than chamois skin. Any tissue paper, and even velvet, should not be used, being liable to scratch or dull the surface. Velvet, if new, may be used, but this material so readily catches the dust that it is not satisfactory. In making a bag or case to hold the lens, use only some soft skin devoid of granulation. Not only must the exterior surfaces of the lenses be kept clean, but also the inner parts, in which dust may accumulate. Unscrew the combinations, and if the slightest resistance is encountered, do not force by using pincers, but, tying a ribbon noose around the portion to be unscrewed, pull strongly against the thread. If this is not successful, that part of the mounting may be heated by an alcohol flame, when separation will readily occur. If, after cleaning the lens, spots remain, they can be removed with a soft skin, soaked in alcohol. A little pure white vaseline on a skin may be passed over the inside parts.—*Le Photo Journal*.

PHOTOGRAPHING ON WOOD BLOCKS FOR ENGRAVERS.

BY JAMES MUNN.

PHOTOGRAPHY has been called an unlimited science. This may be to some a strong assertion, but, nevertheless, it is a true one, and we have only to consider some of the various ways in which it is applied to trade, to be able to comprehend its magnitude. By the power of photography we have our books, periodicals, newspapers, etc., illustrated in a manner that leaves nothing to be desired; the beauty of processes such as photo-zincography, photogravure, half-tone etching, photo-lithography, collotype, and various others too numerous to mention, must be admired by all who have a taste for art, whether that taste is

natural or acquired. It is not our purpose here to consider any of the above methods of producing pictures, but only to confine ourselves to photography on wood blocks for engravers. We must first consider what engraving is ; not only engraving, but wood engraving, as there are various branches of the art, such as copper, steel, calico, and silver engraving. A wood engraving is one cut out of boxwood by the graver or tool in lines, that are either straight, curved, waved or broken (cross-hatched being the proper term) according as the subject may require. In flat tints the lines are cut consecutively the same thickness and depth, so that the result when printed shall appear without a flaw ; the lines vary from 30 to 200 per inch, as the block varies in price. Before the engraving can be proceeded with, the picture must be either drawn, transferred or photographed on the wood. In order to show the advantage of photography I will give the method or procedure necessary when the work is done entirely by drawing. We will suppose the sketch to be ready supplied ; this is then traced on tracing paper with a medium pencil from the original, the penciled side of the paper is then put on the face of the prepared block, and, with a steel drawpoint or tracer, the back of the lines is gone over, which leaves a dim reversed image on the white ground of the block. It is then drawn in outline and shaded on the wood, according to the original on paper. It is then ready for the engraver. Transferring is much quicker than drawing, but a duplicate print must be provided, as the first print will be rendered useless. The damaged portions must be made right with the pencil before cutting the block. The transfer may be a lithograph ; in that case a proof is pulled from the stone and pressed down in contact with the engraving surface of the block and allowed to dry before cutting, as the ink is easily blurred when wet. By photographing the subject direct on to the wood a truer representation of the original is obtained and with much more speed.

We have now reached the subject of our title, and as there are numerous ways by which the same end can be accomplished, they shall be described in detail so that anyone having the desire to try them may do so. It may be as well here to mention that a copying camera and a good rapid rectilinear lens are indispensable ; the better the lens, the better will be the picture on the wood.

A film must first be prepared to carry the sensitive salt. This is composed of :

Gelatine.....	124 grains.
White soap.....	124 "
Water	15 ounces.

The gelatine is soaked in the water for a few hours and then dissolved in a warm water bath, the soap is then added gradually and allowed to become thoroughly incorporated with the gelatine. One ounce of pure zinc white is then added to the solution and finely strained through a piece of muslin. The wood block is coated with this solution which must be thoroughly rubbed into the pores of the wood. It should not be too thick, but should have sufficient body to prevent the silver entering the wood ; this will be found rather difficult and requires time and patience to accomplish successfully. When the coating is thoroughly dry, coat it with the following solution :

Albumen	1 ounce.
Ammonium chloride.....	18 grains.
Citric acid.....	3 "
Water	7 drams.



WILLIAMS' FLASH LIGHT PHOTO.

GROUND FLOOR RECEPTION ROOM. BELLSMITH & POWER, BUFFALO, N. Y.

MADE WITH DALLMEYER LENS.

This is best applied with a broad camel's hair brush. The block is again dried and sensitized with a silver solution of 50 grains to 1 ounce of water; pour a little on the center of the block and spread it evenly with a glass rod; when dry, print under a reversed negative. When printed, the surface is dipped in a strong solution of common salt for a few minutes. After washing, it is dipped in a concentrated hypo bath. Then wash well under the tap, exercising care not to allow the back or sides of the block to absorb too much water or the block will be ruined by warping; to prevent this it is best to coat the sides with common soap or tallow.

Another method in which the image may be printed on the wood is the following: Coat the wood with a little zinc white and albumen, polishing it evenly with the heat of the hand. It is then coated with the following solution:

Ether.....	5 ounces.
Alcohol.....	5 “
Pyroxyline.....	20 grains.

When the pyroxyline has dissolved, 75 grains of silver nitrate dissolved in a small quantity of water is then added. The wood is coated in the same manner as collodionizing and allowed to dry. If the block is wanted in a hurry or a brighter image desired, this coating can be dissolved off with ether and alcohol, mixed in equal proportion, with a little cotton wool. This is allowed to dry, when it is again coated in the same manner as before, dried, and printed upon under a reversed negative, and fixed in a bath of concentrated hypo or cyanide of potassium. This is a more satisfactory way than the previous one, simple to manipulate, and can be printed in about twenty minutes on a dull day. For these methods a special printing-frame is required.

A knowledge of the wet-plate process is essential to the successful working of another process which I shall now describe, and it will not be out of place to give an outline of it. It is necessary to have tools and chemicals all ready and in a convenient position. The following may be mentioned: Four ounces of collodion, 2 ounces silver nitrate, $\frac{1}{2}$ ounce potassium iodide, 1 ounce pure nitric acid, 1 ounce potassium cyanide, 2 ounces cotton wool, 3 ounces alcohol, 1 pound iron protosulphate, 3 ounces glacial acetic acid, 1 ounce citric acid, two half-plate dipping baths and hooks, one bottle of white mucilage, one roller squeegee, the albumen from one egg, and some glazed black paper. The directions for the silver bath and developer are given on the label of the bottle containing collodion.

To begin work, we immerse the glass plate in a weak solution of nitric acid for twenty minutes, then wash under the tap with a small quantity of washing soda, the latter being afterwards thoroughly removed from the plate; this is then allowed to dry in a warm current of air, and afterwards polished with a clean chamois leather. The surface intended for collodionizing must not be touched with the fingers after polishing, and must be entirely free from dust. The plate is held by one of the corners with the forefinger and thumb of the left hand in a horizontal position, the end farthest away from the thumb being slightly raised, to allow the collodion to flow gently and evenly downwards, the collodion being poured from the bottle on to the plate at that end, the surplus is run from the bottom corner into the bottle, the plate being rocked gently at the same time. This operation can be performed at the darkroom door in daylight; if that is

not convenient, it must be done as far away from the gaslight, in the dark-room, as possible. As soon as the collodion sets on the plate, and before it becomes dry, it is immersed in the silver bath, which makes it sensitive to actinic light (daylight, of course, must be excluded during this operation). Care must be taken to flood the plate all over at once, or markings will result, which means failure. Having allowed three minutes for sensitizing, it can be withdrawn; and if the solution flows freely over the plate, it is ready for exposure. This is done while the plate is wet, and must be done quickly, as the plate dries in about five minutes. When the exposure has been made, the plate is developed in the hand, held in the same position as when collodionizing, the developer being poured on evenly and quickly, which requires dexterity and decision. With gentle rocking the image soon appears, but, to dry-plate workers, has the appearance of being thin; when the negative is developed so far, it is washed gently under the tap; when the water flows freely over the negative, it is developed (according to the formula on the collodion bottle), during which process it becomes considerably strengthened. It is then again washed and fixed in cyanide of potassium, and finally once more washed and dried. Care must be taken in using the fixing bath not to allow it to have access to any cuts on the flesh. It is also advisable to avoid inhaling the fumes therefrom. This is how wet-plate negatives are made, but the photographer on wood deviates from this after development (unless the picture has been made from a negative supplied; in that case, the manipulation is complete, with the difference that a transparency instead of a negative is produced). Instead of developing the image, it is fixed at this stage, the result being the thin negative required. It is now necessary to have this film transferred to the wood. The wood block is evenly coated with a pinch of lamp-black and albumen, in the same way as previously described, the black being substituted for zinc white. After coating, the surface is flooded with methylated spirit, to which a light is applied and allowed to burn until exhausted. The surface is then polished with fine glass paper, during which operation the negative has been drying. A piece of black glazed paper (the size of the negative) is coated with white mucilage and immediately placed on the film side of the negative. This is squeegeed down into close contact with the film and allowed to stand one or two minutes until it becomes tacky; the paper is then cut round with a sharp knife about $\frac{1}{8}$ of an inch from the outside. These strips are taken off, and, if the mucilage is sufficiently dry, they will bring the film immediately underneath away with them. The image is removed from the plate, and will be found adhering to the glazed paper. The block is coated evenly with albumen, and the paper is pressed into close contact, with the film side down, to the wood with a roller squeegee. It is a neck-to-neck race as to which will dry quickest, the mucilage or the albumen. The back of the paper is moistened with water, and if the albumen has won the race, the film will be left on the wood, the paper coming away beautifully; but if the mucilage has won, you are inclined to make remarks more forcible than polite. In the event of a transparency being made, the only difference is that zinc white is used instead of lampblack.

This is what is done by the engraver in photographing on wood, as it gives more detail, sharper images and no chemicals are used on the wood to destroy or deteriorate its value.—*The Practical Photographer.*

SOCIETIES.

MINNEAPOLIS CAMERA CLUB.—Officers for 1894: President, W. C. Whitney; Vice-President, A. L. Eidemuller; Treasurer, C. S. Fellows; Secretary, C. J. Hibbard; Director for Lantern Slide Interchange, A. L. Eidemuller. Lectures, demonstrations or lantern slide exhibitions every Wednesday evening. Club Rooms, 13 and 15 Fourth street, north.

SUMMER COMPETITIONS.—Arrangements have been made to give a prize exhibition of work of the members, at the Club Rooms, on the evening of the second Wednesday of each month, from June to October inclusive, as follows: June 13th, Portraits (for amateurs only); July 11th, Hand Camera Work (without tripod); August 8th, Instantaneous Work Showing Motion; September 12th, General Landscape and Marine; October 10th, Lantern Slides. The following points will be taken into consideration: 1st, composition and general artistic excellence; 2d, exposure and development; 3d, printing, toning and mounting. One hundred marks to be considered perfection in each case.

After the five exhibitions have been held, the competitor having the highest number of marks to his credit will take the first prize; the second and third highest to take second and third prizes, respectively.

PRIZES.—*First*.—An order for \$15 worth of photographic goods.

Second.—An order for \$10 worth of photographic goods.

Third.—An order for \$5 worth of photographic goods.

After the prizes are awarded, the work will be exhibited to the public at one of the art stores.

PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.—At a public reception on April 25th, given to Mr. F. E. Ives, the Secretary, in a brief address, presented Mr. Ives with the special gold medal awarded by the Society for his solution of the problem of reproducing natural colors by photography.

This is the first medal awarded by the Philadelphia Society, although Mr. Ives has been awarded others by the Society of Arts in London and Vienna, and the Franklin Institute.

New officers: President, Joseph H. Burroughs; Vice-Presidents, Chas. R. Pancoast, R. S. Redfield; Treasurer, George Vaux, Jr.; Secretary, Edmund Stirling.

PHOTOGRAPHIC CONVENTION OF THE UNITED KINGDOM.—The 1894 meeting will take place in Dublin during the week commencing July 9th. The proceedings will be opened by a *conversazione*, held in the rooms of the Royal Dublin Society. The convention meetings and exhibition will be held in the hall of the Photographic Society of Ireland, 15 Dawson street. Numerous excursions will be arranged. Communicate with F. P. Cembrano, Jr., 10 Cambridge Gardens, Richmond, Surrey, England.

CLINTON CAMERA CLUB.—New officers: President, Horace A. Thissell; Vice-President, Dr. W. O. Johnson; Secretary and Treasurer, David Dias. Executive Committee: E. L. Jaquith, E. E. Alley, C. W. Davis, Miss Mabel Breed—with the President, *ex officio*.

BROOKLYN INSTITUTE, PHOTO DEPARTMENT, AND BROOKLYN ACADEMY OF PHOTOGRAPHY.—Joint exhibition. Judges, L. W. Seavey and W. A. Fraser. Awards: *Gold stars* to W. Arnold, H. B. Fullerton, W. T. Wintringham and "Tempest Tossed." *Silver stars* to W. Arnold, S. Baron, Mrs. C. H. Burdett, W. H. Cooper, M. R. Jones, S. D. Kelly, J. Merritt, C. S. Reynolds, B. G. Way and G. W. Hart. *Red stars* to Mrs. C. H. Burdett, G. L. Coit, J. F. Flagg, S. Hendrickson, S. D. Kelley, H. M. Lewis, J. Merritt, J. B. Morison, F. D. Reed, C. S. Reynolds, T. A. Tisdell, E. G. Tremaine, W. T. Wintringham, 244, and A. A. Goubert.

**Prof. CHAS. F. CHANDLER, Ph.D., LL.D.,
FREDERICK J. HARRISON.**

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Advertisements should reach us not later than the 23d of each month. It is also necessary to notify us of any alteration on or before this date.

Subscriptions to the BULLETIN will be received by all Photographic Stock Dealers in any country, by the American News Company, and by the publishers,

E. & H. T. ANTHONY & CO., 591 Broadway, New York.

N. B.—We cannot undertake to answer questions of a technical character except through the columns of the BULLETIN. Correspondents will please remember this. No attention will be paid to anonymous communications.

R. E. S. (Mex.).—Many thanks for negative. We have written you privately.

W. D.—Many thanks for correction.

E. K. S.—Very little has been published. See "Lantern Work." We hope to print an article on this subject soon.

H. F.—Prints received; are certainly very creditable productions. Article crowded out, but will appear in July issue.

D. L. P.—There are many ways of making an indelible ink for marking linen. Try 1 part silver nitrate in 6 parts of water. Add liquid ammonia until precipitate formed re-dissolves. Then a little sap green or indigo are ground and mixed with 1 part of gum arabic, and this and the silver solution are mixed. Add water until it occupies 8 parts. When dry, pass a hot iron over the linen. This ink does not injuriously affect even the finest linen.

For making leather water proof use Szerelmey's freestone liquid. Castor oil not only softens leather, but makes it

water proof. Black leather varnish is made of boiled linseed oil, in which a drier, such as litharge, has been boiled. It is colored with lampblack.

M. (Seattle).—Many thanks for excellent photos.

BOOKS RECEIVED.

A NEW CATALOGUE.—We are in receipt of the new catalogue issued by W. C. Cullen, of 61 William street, New York. It is well printed and copiously illustrated, and is particularly noticeable for its neat and dainty appearance. In it will be found all the recent improvements in photographic apparatus.

"La Perspective en Photographie," illustrated (Paris: Gauthier-Villars et fils), 1 fr. 50 c. Will be read with profit by all interested in photography.

"Photographisches Notiz und Nachschlagebuch für die Praxis," by Ludwig David and Charles Scolik. W. Knapp, Halle a/S., Germany. See "Jottings from Germany."

Eder's Year Book for 1894. W. Knapp, Halle a/S., Germany. See "Jottings from Germany."

TABLE OF CONTENTS.

	PAGE		PAGE
BOOKS RECEIVED.....	208	QUERY COLUMN.....	208
COLORING PHOTOGRAPHS, <i>by F. Jol</i>	201	SLOW DEVELOPMENT, <i>by W. J. Hickmott</i>	202
CONVENTION COLUMN.....	197	SOCIETIES.....	197
ITEMS OF INTEREST.....	185	THE DIFFERENCE IN PROCESSES OF FILM MAKING.....	194
JOTTINGS FROM GERMANY.....	199	THE ELECTRIC LIGHT IN PHOTOGRAPHIC STUDIOS, 180	
LANTERN WORK.....	198	THE HAND CAMERA.....	178
NAMES AND TITLES OF PICTURES, <i>by Rev. F. C. Lambert</i>	189	THE TREATMENT OF LENSES, <i>by G. Niewenglowski</i>	177
OUR MAY ILLUSTRATION.....	196	WARM WEATHER TROUBLES.....	202
PHOTOGRAPHING ON WOOD BLOCKS FOR EN- GRAVERS, <i>by J. Munn</i>	203		

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108 10
109 10 10740



NEGATIVE & PRINT
BY
LANE, BROOKLYN.

PRINTED ON
AMERICAN "ARISTO" PAPER.

STUDIO WORK.

ANTHONY'S Photographic Bulletin.

EDITORS :

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

FREDERICK J. HARRISON.

VOL. XXV.

JULY 1, 1894.

No. 7.

THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

THE Executive Committee of the Photographers' Association of America have certainly worked like Trojans, and this month will see the successful culmination of their efforts. Printed matter giving every detail of the proposed programme has been well circulated, and the untiring Secretary, despite other pressing duties, has supplied the photographic press with monthly letters showing the progress made. The St. Louis Convention will be the convention of conventions. The efforts of the Committee will tell, and photographers throughout the country will flock to St. Louis and profit in body and in mind by the many good things provided for them. An exhibition of photographs by nearly every photographer in the country should indeed prove a drawing card. Add to this a complete collection of the latest novelties in studio apparatus and accessories, and, above all, a series of practical demonstrations by recognized authorities, and it will be seen that those who stay away are likely to miss one of the greatest opportunities of a lifetime. Operators, printers, retouchers, proprietors—all must profit by the interchange of ideas. This annual gathering should be, and is, the best thing in the world for all photographers, great and small. The eighteen classes, in which prizes are awarded, permit every one to have a fighting chance, and a right hearty competition should result. The 1894 motto may well be printed in big type :

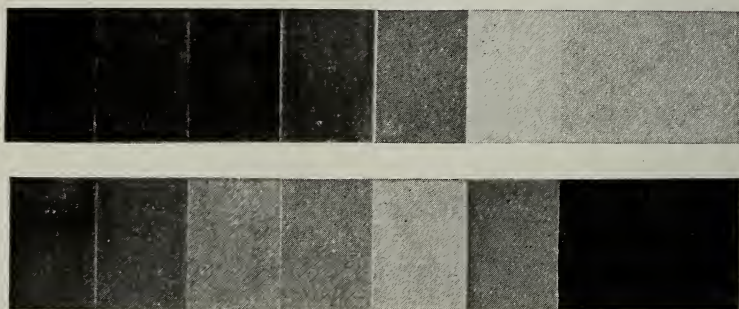
“DON'T MISS THE ST. LOUIS CONVENTION.”

Miss it, indeed ! What photographer, in these days, can afford to be absent from the annual meeting of the Association which has for its object his enlightenment and the furtherance of his art. The Association exists to benefit the photographer. Let this latter individual then help the Association by his presence, his exhibit, and his practical assistance. Long may the Photographers' Association of America exist, and may its future committees always work with the energy displayed by the 1894 Executive.

ORTHOCHROMATIC PHOTOGRAPHY.

DESPITE all that has been written and demonstrated regarding the use of orthochromatic or isochromatic plates, comparatively few photographers are as yet using them for all general work. The ordinary dry plate retains a firm hold on the affections of both amateur and professional, although there are encouraging indications that orthochromatic plates are receiving more attention than heretofore.

Many photographers, especially professionals, have a decided dislike to experimenting, and cling to old associations and customs until forced by some more enterprising competitor to remove the cobwebs from their organs of vision. Some have an idea that orthochromatic plates are useful for the copying of paintings and such subjects, but are not intended for landscape work and portraiture. Others have tried the plates, found them wanting, and, without stopping to investigate the causes of failure, have blamed the plates and discarded them. It is a matter for regret that the general adoption of orthochromatic plates is so long



Black R O Y G B I V

Scale of colors photographed on ordinary and on orthochromatic plates.

delayed, but we believe that it is only a matter of time when ordinary plates will be a rarity, obtainable only with difficulty. Like every innovation, color-sensitive plates have had to encounter considerable opposition, due partly to the poor quality of the first batches issued, and partly to the failure on the part of consumers to adopt proper precautions.

It is obvious to all that yellow, red, and orange light are without appreciable effect, under ordinary conditions, upon the ordinary gelatino-bromide plate. Because of this it is possible to use considerable illumination of these colors in the darkroom. If a copy be made on an ordinary plate of an object containing these colors, the resulting negative will be clear in those parts corresponding to yellow, orange and red, and the print will show these parts much darker in proportion to the rest of the picture than they appear to the eye in the original. Again, the blue and violet colors exercise a strong action on the sensitive plate, and the print will show these parts much lighter than they appear visually in the object copied. The two half tones are from photographs made on an ordinary and on an orthochromatic plate. The object copied was a scale made of specially selected colored papers, these being cut into strips and pasted side by side in the following order, black, red, orange, yellow, green, blue, indigo, and violet. A cursory glance shows that a much truer rendering of the color values has been obtained in the lower picture, that made on the orthochromatic

plate. It follows, therefore, that every colored object photographed with an ordinary plate is not truthfully represented as regards the color values. As every landscape and every object is more or less colored, the ordinary dry plate should not be employed if some other medium can be found which will more truthfully reproduce the object; that is, which will give a representation of the colors more proportional to their action on the eye. In other words, a plate should be used whereon the chemical activity of the colors is proportional to their optical effect. The nearest approximation to such a plate is the orthochromatic or isochromatic plate. These are made by mixing with the emulsion, with which the plates are coated, an aniline dye. The average photographer, however, seldom stops to inquire into the composition of the material he is using. Results are what he is after, and it is an undeniable fact that, for the best results in any photographic work, orthochromatic plates are necessary.

Orthochromatic plates being sensitive to yellow and, to an appreciable extent, to red light, the ordinary darkroom lamp can only be used with the greatest care. Dark ruby glass should be used, or, if not obtainable, the red "non-actinic" paper will be found advantageous. Even with this light, only as much illumination as is necessary should be employed. Plates are now packed film to film, and with the simple plate-holders now in common use little or no light is required until development. During this latter process the lamp may be placed in a remote part of the room, or, better, the tray may be covered, except while examining the plate. With these precautions, there is little danger of fogging an orthochromatic plate. But any attempt to handle one of these color-sensitive plates in the same manner as an ordinary plate will inevitably result in failure. The same developer as for ordinary plates is used, and the whole process of development is similar, apart from the precautions above mentioned.

The view photographer will find that these plates give him a better rendering of distance in landscapes, enable him to catch clouds against a blue sky, and in marine views his horizon line will not be conspicuous by its absence. The portrait worker will obtain a correct representation of the color values of the dresses and ornaments of his sitters, and will save in the retouching. Freckles, which on an ordinary plate appear as light spots, will hardly be distinguishable. Only an orthochromatic plate can give a proper photograph of paintings, rugs and colored samples. The carrying of photographs in lieu of samples is daily becoming more popular, and only by the use of an orthochromatic plate can a true idea of the object be conveyed. These plates cost but little more than ordinary plates, and there being every reason for their universal adoption, this desirable end should rapidly be attained.

THE HAND CAMERA.

"MAKE sure that you are right and then go ahead" may be with advantage changed for the beginner to "make sure you understand the working of every part of the camera before commencing work with it." Strict attention should be paid to the instructions imparted by the vendor of the camera, and the contents of the hand-book, which nowadays accompanies every instrument, should be thoroughly digested. Examine carefully the shutter, time and instantaneous attachment; note the image on the ground-glass and finder, and study the focusing arrangement until the ground-glass can well nigh be

dispensed with. Again, do not use a new hand camera until it has been thoroughly dusted and the lens cleaned with a piece of chamois leather. The roll-holder, too, should be well examined in the daylight before loading, and the operation of filling gone through with a dummy, made of a roll of paper. Another point, do not for any considerable length of time leave the slide withdrawn. Particles of dust may settle on the plate or film, and necessitate much spotting.

Unless on a tour, where darkroom facilities are not obtainable, it is well to develop the exposed portion of the roll of film without waiting until the whole length has been used. This necessitates considerable waste of material, a piece some 4 to 6 inches long often being wound on the receiving roller before the film is stretched tightly. This waste may be easily obviated by the use of a strip of paper some 8 inches long, and of the same width as the film. One end of this strip is cut to a point, and on the other is pasted a piece of paper in such a manner that the loose end of the film may be pasted between the two strips of paper. This paper extension is then wound on the receiving roller, and the film tightly stretched without any waste of material.

The fact that the roll-holder is loaded for fifty or one hundred exposures should not be an excuse for any reckless button-pressing. If every exposure is made only after a careful consideration of all points, the development will be a really interesting process and the results probably worth preserving. Despite the fact that punctures, indicating the point where each picture begins and ends, are made automatically in the film, it by no means seldom happens that these punctures are invisible in the darkroom. In consequence, the cutting becomes often largely a matter of guesswork, with the odds in favor of the spoiling of the picture. The continued pressure on the film on the receiving roller flattens out the punctures. A method by which a small piece would actually be punched out of the film would apparently be preferable. Such an arrangement, indeed, would not be difficult to devise, proper provision being, of course, made for the disposition of the pieces thus punched out. The punctures, however, may nearly always be readily found if the back of the film is examined by reflected light. Looking through the film or on the sensitive side they may not be visible, and the prolonged exposure to the red light may produce fogging. But by reflected light the smallest irregularity can be discerned in the smooth back of the film. Having found one set of punctures, the location of the rest is easily ascertained by measuring with a piece of wood cut to the length of each exposure. A very handy instrument for measuring and cutting roll films is the Anthony film cutter. The film is pulled under a flat metal guide and measured along a board, being then cut in the same manner that a check is torn from the stub with the aid of a rule. With this instrument accuracy is secured in the severance of the film. It will be exact in length, and the cut will be a straight one. This film cutter is a handy piece of apparatus for the darkroom.

While on tour, do not omit to save both tin-foil and film boxes. Each roll, when exposed, should be wrapped in the tin-foil, placed in the box, and the latter sealed with gum paper and plainly marked "exposed film."

All communications for, and all matter relating to advertisements in, the August issue of the BULLETIN must reach us on or before July 20th. Correspondents will please note that we close up for this issue three days earlier than usual.

ECONOMICAL DEVELOPMENT WITH PYRO.

IN the February issue of the BULLETIN we wrote regarding the results we had seen obtained with pyro developer in one of the New York galleries. The properties of the developer we referred to, were, (a) apparent unlimited developing power; (b) entire freedom from discoloration, even after prolonged exposure to the air. Mr. Moreno, the photographer to whom we referred, gave a demonstration of his developer before the Society of Amateur Photographers on May 8th. Three solutions are made up:

1. Saturated solution of sulphite of soda.
2. Pyro solution—a saturated solution of sulphite of soda saturated with pyro.
3. Saturated solution of carbonate of soda.

Using these three solutions, the developer, for a correctly exposed plate, is made up as follows:

No. 1.....	8 ounces.
No. 2.....	2 “
No. 3.....	4 “

The developer can be adjusted for over or under-exposure by ringing the changes on these three. Water must not be added, or oxidation will immediately commence, the solution slowly becoming a brownish red.

It would seem at first sight that such a developer would be far too energetic, but trial shows it to steadily accomplish development, the procedure being entirely under control.

THE ROLL-HOLDER QUESTION.

THE contest between the Blair Camera Company and the Eastman Company regarding the roll-holder question has been decided in favor of the Eastman Company, but the scope of the decision is very limited. As we read the decision it only applies to the points on the roll for puncturing the film; and while the Blair Company showed a similar device which was used for measuring cloth and bagging, and the teeth for holding the cloth and bagging were the same as those in use on the roll-holder, the judge decided that “although such device may seem only a modification of old devices, as the result accomplished is new and useful, I think it patentable.”

This decision is exactly the reverse of the position that the United States Circuit Courts have been taking for some time past, namely, that adaptation is not invention; and many inventors will, doubtless, remember that they have often had applications for patents rejected on the ground that the use of old and well-known mechanical devices to produce results that were entirely new, was not patentable.

An appeal has been taken from this decision, and without doubt it will be reversed; in any event it only covers the small points on the roller, and does not apply in any other way to the roll-holders now manufactured by the Blair Camera Company.

The case has been in the courts for some time, and during this time the improvements which have been made in the Blair roll-holders have been such that they do not require to use some of the devices which are claimed by the Eastman Company.

THE P. A. OF A. CONVENTION.

A FINAL LETTER FROM SECRETARY RÖSCH.

THE sounding of the bugle calling you to St. Louis should be heeded by the good, reputable men all over our country. We do not only want you to come here to have a good time, but we want you to learn something at the same time. We want to show you our great city, and we want to prove to you that the Photographers' Association of America is again in a prosperous condition. The near approach of the St. Louis Convention, which unquestionably will go on record as the most memorable convention ever held in the history of the Association, prompts me to make a last appeal to you to lend your support towards its still further advancement in the future. The strengthening of the National Association, as well as all the State organizations, will eventually regulate the question so often referred to, and that question is the question of prices. By proper intercourse and affiliation, we can band together and regulate all matters that are of interest to our profession, and go on improving our surrounding conditions almost as we please. But this cannot and will never be accomplished unless we band together as brother photographers and make our National Association the father and dictator of photography. Much has been said the past few months on this subject, and much good has been done by the various magazines, for which we must all be thankful. Let me say again that it has been the object of your present executive officers to not only make a success of the St. Louis Convention, but to greatly improve the condition of the Photographers' Association of America. We as photographers should not stop at this; we should make it a part of our duty to become a member of that organization, and thus aid in upholding its future policies and noble work. Do not think that you have done your duty if you come to St. Louis and see all that will be here for you to look at; there is another duty far beyond that, and that duty is to return to your home and make up your mind to improve your surrounding conditions, to improve your work, and to even improve your character in your daily life (for not one of us is perfect), and the last duty of all will be to retain your place as a member of the Association and lend your personal aid to improve its condition by making better work from month to month, until the next year, 1895, will bring you among the "shining lights of photography," and thus make you eventually feel proud of your profession, instead of being ashamed of it, as many are. If you follow this course you will find that our National Association will also improve with you, and the time will come when the numerous State associations, with the National to look up to as dictator, will wield such a powerful influence that the "Cheap Johns," whom we do not want as our companions, will eventually be obliterated. It is an utter impossibility to control prices by any other means than by a brotherly affiliation and by legitimate and powerful influences of the nature above mentioned. Let me say, in conclusion, that I hope to be able to shake your hand in our hospitable city here on the Mississippi, and I also hope to remember every one of you who will be fortunate enough to be numbered as our guests. Pardon me if I use our motto once more—

"DON'T MISS THE ST. LOUIS CONVENTION."

Fraternally yours,

ED. RÖSCH.

LETTER FROM TREASURER SCHNEIDER.

COLUMBUS, O., June 16, 1894.

Editor ANTHONY'S PHOTOGRAPHIC BULLETIN :

A short time ago I received a letter from one of the craft, asking what advantages were to be derived from the State or National conventions of photographers. From the tone of his letter he has evidently seen one or more of Rösch's red-headed Miss Don'ts, and hardly knew what to do about it. As the reply was a general one, which might apply to others in the same fix, I give the substance of it below :

"Photography is at this time making such rapid strides forward that it keeps the best of us on the jump to keep within sight of all the new things, and unless something of the nature of conventions are provided, it would be utterly impossible to keep up with the times.

"Unless you attend the conventions, be they State or National, how will you know what your neighbor is doing—the kind of work, the style, the effects he is getting? Then, again, there is much to be heard that will be of practical benefit to you in every branch of your business, information that could be gained in no other way than by being present.

"In this regard, I think the State associations have started in the right direction by allowing more time for general discussion, criticism of ways and things in general, that will be of great benefit to each of us. Those in attendance at St. Louis next month will find plenty to criticise, and will be sure to take something home with them that will be of use ; even the man that knows it all will be sure to learn something that he did not know before.

"We all need recreation in some form. Many of us are housed up from one year's end to the other, never allowing ourselves to think of a vacation, for fear our worthy competitor will get some of our business ; but the little lost in this way is more than repaid with the new energy and vim with which you can take up the work after returning from the convention."

Put aside the camera and thought of the darkroom and skylight and join us at St. Louis in the boat excursion and picnic and many other features of enjoyment ; something to please everybody. I hope to meet all of you there.

I am, Yours fraternally,

J. S. SCHNEIDER,

Treasurer Photographers' Association of America.

THE red stickers, DON'T MISS THE ST. LOUIS CONVENTION, have been well used and will doubtless bring results. Every number of the *May Professional Pointer* had one on the cover, and the red and green made a great combination.

DID you go to the St. Louis Convention before ? If so, you hardly need to be told not to stay away this year. The Entertainment Committee may be relied upon to make things comfortable for you.

WE understand that practically every western photographer will be at the Convention. It behooves the eastern portion of the fraternity to see that they are fully represented. Only one week, but that full of pleasure and profit.

LETTER FROM J. C. STRAUSS.

ST. LOUIS, MO., June 16, 1894.

To the Editor of the BULLETIN,
New York City, N. Y.

DEAR SIR,—I hope that you will use your large and widely extended influence in behalf of the convention to be held here next month, as I feel that every one of our fraternity that visits St. Louis will be amply repaid for the trouble and expense incurred. The local committee having in charge the arrangements of the convention would like to have the attendance as thoroughly National as possible. We, of course, are glad to have our friends from the near-by States with us, but we would especially desire a large representation from distant points. Present developments indicate that there will be much at this convention of a novel and interesting nature, which would prove instructive to all who attend.

I believe that the halls devoted to the convention are larger than those in which any previous annual meeting has been held ; so large, indeed, that some of the more conservative of the local committee feared that there would be much space remaining unused, but already every foot has been rented, and this would indicate to me that there will be many things displayed which cannot but be of assistance to any progressive photographer. I believe this will be especially true of printing-out papers, and I hope that I will not be divulging a secret when stating that there will be a number of surprises, illustrating the remarkable forward movement in our art since we last met.

It is useless for me to assure you that every arrangement is being made for the creature comforts and enjoyment of those who will attend.

St. Louis has a world-wide reputation as a convention city, and those having the details in charge will see that this worthy reputation is upheld and added to.

I again request you to urge upon photographers in all parts of the country to be with us, and I will personally say to each one of them,

“DON'T MISS THE ST. LOUIS CONVENTION.”

Yours fraternally,

STRAUSS.

**FOURTEENTH ANNUAL CONVENTION OF THE PHOTOGRAPHERS'
ASSOCIATION OF AMERICA, EXPOSITION BUILDING, ST.**

LOUIS, MO., JULY 24, 25, 26, 27, 1894.

Adam Heimberger, President, New Albany, Ind. ; George T. Bassett, First Vice-President, St. Louis, Mo. ; D. R. Coover, Second Vice-President, Chicago, Ill. ; J. Ed. Rösch, Secretary, St. Louis, Mo. ; John S. Schneider, Treasurer, Columbus, O.

COMMITTEES.—Social Session : George T. Bassett, J. C. Somerville, J. Ed. Rösch. Instructive Session : John S. Schneider, R. P. Bellsmith, W. B. Kimball.

LOCAL ARRANGEMENT COMMITTEE.—J. C. Strauss, Chairman ; A. S. Robertson, Secretary ; J. C. Somerville, Treasurer ; G. E. Brucker, F. Ernest Cramer, George T. Bassett, M. A. Seed, H. J. Armbruster, L. F. Hammer, Jr.

LOCAL RECEPTION COMMITTEE.—G. Cramer, George T. Bassett, S. Smith, M. A. Seed, John J. Samborsky, Charles F. Meier, J. C. Strauss, W. H. H. Clark, F. R. Parsons, J. C. Somerville, E. Mallinkrodt, Robert Benecke, L. F. Hammer, H. A. Hyatt, A. H. Curtis, A. J. Rösch, F. W. Guerin, A. F. Spann, A. S. Robertson, O.

Herf, W. O. Miley, E. H. Bell, H. Holborn, M. Schweig, J. Ed. Rösch, H. J. Armbruster, S. Cohl, G. E. Brucker, F. W. Frericks, E. Saettele, L. F. Hammer, Jr., W. A. Toel, F. Ernest Cramer.

OFFICIAL PROGRAMME.

Monday, July 23d, a greeting of friends at the Southern Hotel in the evening.

Tuesday, July 24th, 10 A. M., First Session. Address of Welcome by Mayor Walbridge.

Order of Business: 1. Reading of Communications. 2. Reports of Committees. 3. Appointment of Judges. 4. Treasurer's Report. 5. Selection of Next Meeting Place. 6. Appointment of Committee on Nomination of Officers. 7. Address by President Heimberger. At the close of this session the Cramer Prizes will be awarded.

2 P. M., Second Session. Reading of Communications, Report of Nominating Committee. Discussions: What is the Best Developer? What is the Best Method of Lighting? Answer to the Question Box. Demonstrations of Apparatus and Appliances by Manufacturers (limited to ten minutes each). Manufacturers wishing time at this session will please notify the Secretary by 10 A. M.

Tuesday Evening, 8 P. M., a Special Programme, Opera, Uhrig's Cave, corner Washington and Jefferson avenues, tendered to the photographers and their friends with compliments of G. Cramer. Apply for tickets at Cramer exhibit.

Wednesday, July 25th, 10 A. M., Third Session. Reading of Communications, Reading of Papers, Reports of Standing Committees, Election of Officers. 2 P. M., No Session. Exhibits open to the public. Admission, 25 cents.

Wednesday Evening, Instructive Session, 8 P. M., at Entertainment Hall, Exposition Building. This will be the most profitable meeting of the Convention.

LANTERN EXHIBITION.

Some of the best pictures of the year will be shown for criticism. Demonstrations of lighting, posing and grouping will follow. Practical talks on practical subjects by practical men.

Thursday, July 26th, Grand Boat Excursion. The steamer *State of Kansas* will leave foot of Olive street at 10 o'clock A. M. A ride on the Mississippi and dinner at Montesano Park. You will see baseball (as it should be played).

STRAUSS' NINE.			BASSETT'S NINE.		
NAME.	POSITION.	RESIDENCE.	NAME.	POSITION.	RESIDENCE.
Julius Strauss.....	S. S.—Captain.	St. Louis.	Geo. Bassett.....	S. S.—Captain.	St. Louis.
Charlie Hetherington	Catcher.	Chicago.	Tom Pattison.....	C. F.	New York.
S. L. Stein.....	3d Base.	Milwaukee.	Geo. Ayers.....	R. F.	New York.
C. S. Abbott.....	2d Base.	Jamestown, N. Y.	J. C. Somerville....	L. F.	St. Louis.
Fitz Guerin.....	1st Base.	St. Louis.	Sid Wells.....	1st Base.	New York.
Billy Wood.....	C. F.	Philadelphia.	Fred Hammer.....	2d Base.	St. Louis.
Frank Frank.....	R. F.	Chicago.	Rad Coover.....	Catcher.	Chicago.
Ed. Rosch.....	L. F.	St. Louis.	Walter Kimball....	Pitcher.	Columbus.
Geo. Brucker.....	Pitcher.	St. Louis.	M. J. Steffens.....	3d Base.	Chicago.
Umpire—R. P. Bellsmith, Cincinnati.			Umpire—Johnnie Schneider, Columbus.		
SUBS.			SUBS.		
Dave Thompson,	P. H. Rose, Providence.		Fred. Wallach, Chicago.	Ed. Dana, New York.	
Kansas City.	G. Cramer, St. Louis.		Tom Harrison, Chicago.	M. A. Seed, St. Louis.	
W. H. Morrison, Chicago.					

There will be a tub race, with your friends in it (or in the water); a sparring match; a fat men's race; a foot race; an egg race (ladies'); a sack race; and the committee is thinking of more. All the St. Louis photographers, dealers and manu-

facturers ask of you is to come with them and have a good time. "Home by moonlight."

Friday, July 25th, 10 A. M., Fourth Session. Unfinished Business. 2 P. M., Fifth Session. Awarding of Prizes.

REDUCED RAILROAD RATES.

Rates on all railroads will be one fare and one-third on the certificate plan. Inquire of your local ticket agent for particulars, on or before July 10th. If you find the agent has not been notified of the reduction, you will have sufficient time for investigation. Without certificate from starting point, full fare will be charged. Apply for certificates at least thirty minutes prior to departure of trains. Upon your arrival, be sure to deposit your certificate, for signature, with Treasurer at Exposition Hall.

SPECIAL HOTEL RATES.

Southern Hotel, Broadway and Walnut streets. American plan; \$3 per day and upwards.

The Lindell, Washington avenue and 6th street. American plan; \$2.50 per day; two persons occupying one room, \$2 per day.

Westerman's Hotel "Rozier," 13th and Olive streets (opposite Exposition Building). European plan; rooms, 75 cents per day and upwards. Leave car at 12th and Pine streets.

St. James Hotel, southwest corner Broadway and Walnut streets. American plan; \$1.50 per day and upwards.

Hurst's Hotel, southwest corner Broadway and Chestnut streets. European plan, 75 cents per day; American plan, \$1.50 per day.

Merchants' Hotel, southwest corner 12th and Olive streets. American plan; \$1.50 per day and upwards. Leave car at 12th and Pine streets.

Take any car for above hotels going north at the Union Depot. All trains coming into St. Louis enter at Union Depot.

ITEMS OF INTEREST.

ENTRY forms for the thirty-ninth annual exhibition of the Photographic Society of Great Britain may be obtained at the BULLETIN office. The exhibition will be open from September 24th to November 14th. Judges: Art—F. P. Cembrano, Jr., Col. J. Gale, Seymour Lucas, F. M. Sutcliffe and B. Gay Wilkinson, Jr. Technical—Chapman Jones, A. Pringle and J. W. Swan. Secretary's address, 50 Great Russell Street, London, W. C. Foreign exhibitors are invited to contribute. The Society will pay the carriage of photographs on the return journey, and provide frames or portfolios during the exhibition for approved photographs. There will be no charge for wall space. No exhibit will, under any circumstances, be received after September 12th.

SPEAKING on the permanency of the undeveloped image on dry plates, C. H. Bothamley says: "The final conclusions would seem to be, (1) that on a properly prepared and thoroughly washed gelatino-bromide emulsion plate the latent or undeveloped image is practically permanent when protected from damp and from injurious gases, and (2) any apparent destruction of the latent or undeveloped image is due to saline impurities left in the emulsion, and most probably is only an apparent destruction, the real fact being that, for the same reason, the film at those points was less sensitive. This permanence of the undeveloped image affords convincing proof, if any proof is now needed, that the

change producing the undeveloped image is a change of the order which we commonly call chemical, and the property of development is not merely the result of a condition of physical instability." It is not an uncommon thing in these days to keep a batch of plates or roll of film after exposure for one or even two years before development. We would like to have the experience of some of our readers regarding the permanency of the undeveloped image.

W. K. BURTON, in *Photographic Work*, recommends for orthochromatic photography a screen placed in contact with the sensitive surface. The screen consists of "patent plate" glass coated with gelatine which is colored with ammonium picrate. This coating solution is prepared by adding ammonia to a saturated solution of picric acid until the odor indicates an excess of alkali; the solution is diluted with half its bulk of water and 20 grains of gelatine to the ounce is added. The colored film should be varnished.

"UNIFORM lighting, uniform strength of solutions, a maximum of sulphite and uniform temperature are the main factors in obtaining uniformity of development."—*Brit. Journal of Phot.*

WALTER WHITE has obtained a patent in England for "Daylight Carbon Tissue," and this material will soon be sold by the Autotype Company and may be obtained from our publishers. The claims in the specification are:

(1) The use of opaque or non-actinic paper, or other flexible material, as a support for pigmented gelatine, so that the same can be sensitized, and, after squeegeeing on to an opaque support, can be dried in ordinary daylight substantially as herein described.

(2) The method of preparing pigment paper for the carbon process of photographic printing, substantially as herein described, and for the purpose stated.

WE publish elsewhere the official programme of the convention of the Photographers' Association of America. There is no doubt but that it will be the most successful convention held in this country.

In an excellent work on copyright, A. Bignon, of Paris, writes thus concerning the United States laws: "The rights of authors of literary and artistic works have been protected by a law incorporated in the statutes of July 8, 1870; Article 4065 protects photographs, after registry of same, imposing a fine of \$10 for each illegal reproduction. A later law, March 3, 1891, recognizes the photographer's rights as an author. The copyright law, however, favors none but Americans, and contains the unsatisfactory clause, 'Negatives to ensure protection must have been made in the United States.' This is the more unsatisfactory, since photogravures are not subject to this restriction."

THE new catalogue of lenses, shutters and prisms of the Bausch & Lomb Optical Company is to hand. It contains much of interest to every photographer. In a short article on "Selection of Lenses," achromatism, angle of view, rapidity, depth of focus, flatness and definition are ably treated.

Dr. HUGO SCHROEDER, for many years director-general of the optical works

of Ross & Co., of London, has joined the staff of experts engaged by the Manhattan Optical Co.

E. S. STERRY, of Albany, has opened a new studio at 55 North Pearl street, that city. Careful attention has been paid to every detail, and the arrangement from roof to floor is perfect.

ON Tuesday, June 12th, Martha Emma Ewing was married to John Franklin Hetherington. The couple have the good wishes of ten thousand photographers.

D. L. ELMENDORF sailed for Holland on the *Maasdam*, on June 23, taking with him his camera, which, by the way, has already accompanied him for over 45,000 miles. Mr. Elmendorf has added to his equipment a tele-photo attachment, and his last words to us were that he intends making a special trip to Switzerland, for he feels that he now has a lens that will do justice to the mountains. Mr. Elmendorf believes in thoroughly testing every part of his kit before starting. His preliminary work with the tele-photo attachment is described and illustrated in another part of the BULLETIN.

DALLMEYER's new hand camera is a marvel of efficiency and compactness. The 4 x 5 camera and six double plate-holders, with case, weigh 5 pounds, and measure $10\frac{1}{2} \times 5\frac{1}{4} \times 6\frac{1}{2}$ inches.

THE following label varnish does not penetrate the paper in the least : Dissolve 20 parts of gum dammar in 180 parts of acetone, and to the solution add 150 parts of plain collodion. Apply with a soft brush.

SEASONING WOOD.—Growing wood contains in winter about 50 per cent. of water; in March and April, 46, and 48 per cent. in the next three months, with but little variation up to November. Timber dried in the air holds from 20 to 25 per cent. of water; never less than 10 per cent. Wood dried by artificial means until all moisture is expelled is deprived of its elasticity and becomes brittle. If the natural qualities of the wood are to be preserved, the drying must begin at a moderate heat, and be carried on very slowly. For the drying of small pieces of wood, such as are used by joiners and cabinet-makers, a bath of dry sand, heated to a temperature not exceeding 100 degrees, is recommended. The sand diffuses the heat and absorbs moisture, but it must be cold when the wood is first buried therein.

MESSRS. MULLETT BROS'. new catalogue contains practically everything necessary to the photographer. It is, indeed, a credit to its compiler, and will be found a valuable guide; for, being well illustrated, many good hints will be derived from a perusal of its pages.

G. D. MILBURN informs us that he has severed his connection with the Photo-Materials Company, of Rochester, N. Y., and that he is at present engaged in fitting up a factory for the production of several photographic specialties, including printing papers and a new style hand camera. We wish Mr. Milburn every success in his new venture.

PHOTOGRAPHY IN COLORS.

SINCE the earliest days of photography, experiments have been made on the colors which partly darkened silver takes on under the action of the spectrum, with a hope of finding some means of photographing in colors. The complex compounds resulting from the action of reducing agents on silver salts have also been the subject of much study, and Carey Lea has expressed great hopes that the end sought for would finally be reached through the colored silver chlorides or "photochlorides," of which he has made such minute examinations. All attempts to fix the colors obtained in these experiments have failed, simply for the reason that no compound of silver so complex as those of which the colors are formed could possibly be stable enough to resist the further action of light; moreover, the chemical change which would occur in fixing would necessarily alter the color. So little is known of the nature of the reactions that take place that we have no definite line to work in, and the result is that we are no nearer success with this process than we were thirty years ago.

In the Lippmann process the case is quite different. The steady progress that this process has made since the date of its discovery is entirely due to the definite principles on which it is based. As would naturally be expected, the reports that went forth regarding Lippmann's discovery were so exaggerated that the samples of work that were placed before the public did not fulfill their expectations. The process has not passed the experimental stage, and the results of experiment so far are not such as would enable one unacquainted with the subject to judge of their merits; all that can be said at present is that there are great prospects of its being a success. The principle of "interference," on which it is founded, has been made the subject of careful study, and whatever obstacles there may be to its development, their causes are known and measures may be taken to obviate them.

Lippmann's process differs from the photochloride process inasmuch as in the former the colors are produced by physical means, while in the latter they are the result of chemical action. In either case the colors depend on the nature of the light, and in this respect both processes differ from F. E. Ives' method. Photography in colors, properly so called, must be attained by means of some medium that is capable of taking on the color of any particular ray of light that may act upon it, and this is what is accomplished to a certain extent by both the Lippman and the photochloride processes, but not by the Ives method. This method, though not entitled to be called true color photography, has been brought to a high state of perfection, while the Lippmann process is far from this state. The superposition of several colors taken on different negatives is nothing new in itself—having been proposed before the invention of the Ives process—but the method was originally based on incorrect principles, in which state it was impracticable. Mr. Ives has simply brought a process which would otherwise have been worthless to a high state of practical utility.

To return to the chemical part of the subject, a compound possessing the property of reproducing a great variety of colors must be capable of a great number of chemical changes, and must therefore be of a highly complex character; therefore, if there be such a compound, it is in organic chemistry that it must be sought, and here we find an almost unlimited field for experiment. It has been proposed, from time to time, that the tendency of organic coloring

matter to fade on exposure to light might lead to some means of photographing in colors, but without knowing how this property would lend itself to our purpose, we would not know what course to pursue in experimenting upon it. This fading action is simply the chemical decomposition which all sensitive compounds undergo on exposure to light, and as different rays effect different modes of decomposition, different colors must be formed in the course of the fading action. But before this knowledge would be of any use to us we must first inquire why the alteration in color due to the chemical change should bear any relation to the color of the light by which the change was brought about. This question is not difficult to answer when we consider what this continued action would lead to.

A sensitive compound is only affected by the rays which it absorbs, and not by those which it transmits; therefore it is not sensitive to the rays composing its own color. A ray of homogeneous light which is absorbed by the compound will cause a partial decomposition or splitting up into other compounds; the sensitive matter will then become a mixture of several different compounds. These constituents will in general be of a different color from the original and from each other, owing to the difference in composition, and will therefore absorb different rays of light. Any one of these components which is capable of absorbing the ray of homogeneous light in question will in general undergo further splitting up and thus add to the total number. The sensitiveness of a compound—other things being equal—is proportional to the amount of light it absorbs; therefore, the components having the greatest absorbing power for the particular ray of light acting will be decomposed first, and those having no absorbing power for that ray will survive its action.

As this selective process goes on, a point will be reached where there will be no hinderance to the passage of the ray by which the action was induced, and if there is sufficient variety of absorption among the remaining constituents, all other rays will be absorbed, and this one color will stand by itself. The medium will thus take on exactly the color of the light to which it has been exposed. As two chemical reactions taking place in presence of each other will act exactly as if they had taken place alone, the actions of two rays of light could also take place simultaneously without interfering; in this way compound colors could be correctly rendered.

We have here assumed an ideal case; it is hardly possible that so many extraordinary properties would be found in a single compound. In order to be equally sensitive to all colors its absorbing power would have to be the same for all rays. This effect might be brought about by employing a mixture of several compounds in properly adjusted proportions. We have also supposed that all products of the decomposition of the original compound would be equally unstable. Compounds may be formed of such stability as to resist further decomposition, and their absorption would probably interfere with the proper rendering of colors; cases of this kind would have to be carefully guarded against. Since the general effect of light is to destroy absorption instead of increasing it, a process based on these principles would necessarily be positive, and since the darkest shades would be those where no action had taken place, the color of the medium in its normal state should be a neutral tint.

The chief practical difficulty met with is the inferior sensitiveness of most organic compounds, which makes experiments of this kind very tedious. The

sensitiveness of the aniline colors depends to a great extent on the matter with which they are associated; starched paper stained with one of these colors will show a decided bleaching effect in one hour's exposure to bright sunlight, while if gelatine is used, the same effect would be brought on only after four or five hours' exposure. Linen paper, stained with methyl violet and washed to remove the free color, will be slightly bleached in ten minutes' exposure. Paper stained with eosine and treated in the same way will also be very sensitive, but the amount of color remaining in the paper after the washing is so small that only very weak impressions can be obtained; when starch is used the color is much stronger but the sensitiveness is not so great. Picric acid will, under ordinary circumstances, darken on exposure to light; this is probably owing to some of the products of decomposition not being sensitive to light—a case similar to that mentioned above. Paper stained with aurine is of a delicate yellow color and very sensitive, only requiring a few minutes' exposure to bleach completely.

In order to test the theory under consideration, several colors should be mixed and submitted to the action of colored light. Starched paper colored with a mixture of eosine and methyl violet shows a decided tendency to assume varied colors when exposed to bright sunlight under colored glass. Under red glass the purple color of this mixture takes on more red, which becomes more prominent as the exposure is continued; under some samples of blue glass the original color becomes bluer, while under others the opposite effect is sometimes observed. The pink color of eosine becomes decidedly blue under blue glass and a very bright red under some samples of red glass. The exposure required to produce these effects is from thirty to forty hours in direct sunlight, and considerably longer when very dark-colored glasses are used. The difficulty in mixing these colors is that many of them react chemically on each other. There is hardly any limit, however, to the variety of compounds that may be derived from the coal-tar products, and it is not improbable that some may be found among them that will fulfill every requirement.

CORWIN GITCHELL.

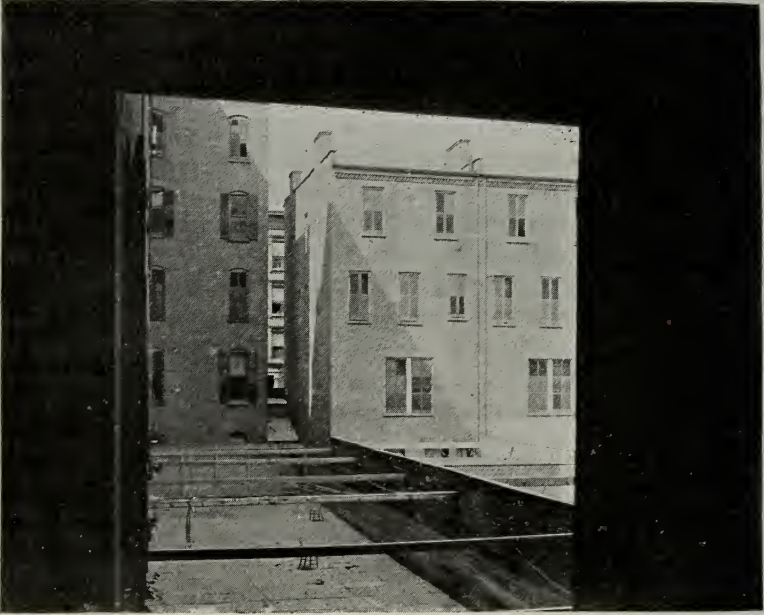
DALLMEYER'S TELE-PHOTO ATTACHMENT FOR 4 x 5 RAPID RECTILINEAR.

HAVING made several hundred exposures in mountainous countries, experience has taught me the folly of using lenses of short focus or of wide angle.

One unwritten rule must be followed if one wishes to get anything approaching true perspective, and that is, never use a lens of shorter focus than the diagonal of the plate used.

As I use my 4 x 5 plates for lantern-slide purposes only, I employ two lenses; one, 3½-inch focus, used for interiors and buildings in confined situations, but is never used for anything else. The other, a 4 x 5 Dallmeyer rapid rectilinear, 6-inch focus. This lens is my "factotum," that is, it is invariably used for everything that is liable to come before my camera. Moreover, this may be used in three different ways: 1st, the lens by itself, 6-inch focus; 2d, the back lens used by itself, by simply unscrewing and removing the front combination, making a lens of 12-inch focus; 3d, the lens intact attached to the tele-photo attachment, converting it into a superb lens of variable focus from 16 inches to 30 inches, *ad libitum*, depending only upon the length of the camera bellows.

In looking over about a hundred of my negatives of mountains, I find that ninety-one of them were made with the 12-inch focus. Many of these would have been much finer had the tele-photo attachment been in existence. It often happens that the most superb views of some particular peak are only ob-



tained at a great distance from the mountain itself, and negatives made even with a lens of 12-inch focus on a 4 x 5 plate are very disappointing, the mountains appearing as if flattened and so minute that there is hardly any resemblance

to the magnificent view our eyes beheld. Just here the tele-photo attachment comes in and gives us just what our eyes beheld, and in many cases the resulting negative reveals more of the minute details of the view than our unaided eyes perceived. One remarkable fact about this lens must not be overlooked—the perspective of this lens, at whatever focus it is used, is much better than an ordinary lens of the same long focus. The curvature, or distortion, is so slight that it is hardly appreciable.

The foregoing half-tones show the capabilities of the tele-photo attachment better than any description. My 4 x 5 camera with the 4 x 5 rapid rectilinear 6-inch focus lens was placed in my bedroom and pointed at a window 200 feet distant at 5 o'clock P. M., so that part of the object should be in shadow. An exposure of one-twentieth second was made. The double plate-holder was then turned over, the tele-photo attachment applied, and the front board of the camera run out until it was 12 inches from the plate. An exposure of one quarter of a second was then made. Both plates were then placed in a tray and developed simultaneously, with the results shown by the half-tones.

The whole gist of the matter may be summed up as follows :

Actual outfit, $\left\{ \begin{array}{l} 4 \times 5 \text{ camera.} \\ \text{“ rapid rectilinear lens.} \\ \text{“ tele-photo attachment and compact carrying case.} \end{array} \right.$

Equivalent to—

Outfit, $\left\{ \begin{array}{l} 4 \text{ or } 5 \text{ cameras.} \\ 4 \text{ or } 5 \text{ lenses, and a trunk in which to carry them.} \end{array} \right.$

D. L. ELMENDORF.

DEVELOPERS.

THE advertisements by different makers of dry plates and films as to the special developer to be used in connection with their wares seem to me to be farcical and laughable. What is a dry plate, how is it made, and what is the action of the developer on same after it has been exposed? Now I am not scientific enough to give all the chemical formulas, nor is such necessary. The consumer does not, at least in the majority of cases, expect to prepare his own dry plates, unless he has more time and money at his disposal than most of us are blessed with. We do know that the coating on the glass is a gelatino-bromide of silver, and that each manufacturer has his own special formula by which he compounds same, and coats the plate or film. As to the difference between the several plates in market, one could only tell after knowing the secrets of them all. As such is unlikely to happen, we can only go by the finished product as furnished by the makers and begin there with our experiments.

The plate is exposed to the action of rays of light, which produce a certain effect upon the salts of silver contained in the film or coating. The developing is, in effect, the reduction of these salts of silver on which the light has acted, and in degrees, according to its strength or weakness. The query now is, which one of the many developers on the market is actually best? I can answer quite confidently “all of them.” They all get there, but perhaps by different routes. You hear expressions on all sides : “Give me old pyro, what it will not do is not worth doing,” “Pyro is no good, stains the plates, hands, clothes, and is not nearly so effective as hydroquinone,” “All are very fair, but when you want a really good standby use eikonogen,” “Never use hydroquinone or eikonogen

alone, but mix them and you have perfection," "Metol is the only perfect developer," "Amidol (or amido) is far ahead of any other," "Rodinal cannot be equaled," "Cristallos will bring out more details than any other" and so they go. I have tried many of above, and sometimes four in one evening, on the exposures made during the day. Sometimes one has brought out negatives more to my liking than another, and I would decide to use that developer. The following week, with same plates, camera and speed of shutter, I have been obliged to go back to one of the discarded developers, as my last love would not give me good results. Can any of your readers answer why? I will state that in trying a developer, it is unfair to both plate and developer to make one standard solution and not vary the proportions, because the action of the light on the plate may have differed quite a percentage, and under such conditions the developer must be varied to suit. You expose a plate, and wish to develop it. Everything else must give way to the plate, as you cannot change it; hence the developer must be suited to the exposure. The question now is, which of the many developers is the one that can be varied most readily and understandingly. It is evident that none of what are termed single solution developers can be perfect in their operations, although they may be compounded so as to suit well enough for many. But no one who values his work would "trust to chances" and, in case it proves disastrous, be satisfied with such result. The proper way would be to study out any one of the various forms, and learn how to control it to suit each exposure, as the only actual things we have to contend with in developing are "difference in exposure" and "what particular object in the plate we desire to secure most." Towards these we devote every energy. As for accepting the verdict of any one party as to the superiority of one over another, one should decide for himself as to whether he is willing to go by what others say, regardless of the motive they have for saying it, or act for himself independently and form his own conclusions. When a manufacturer urges strongly the use of any one article for the development of his plates, it savors very strongly of a personal interest in the sale of such article, and I should think a long time before I even tried it, for fear it might be like the old advertisement in which a "formula would be given free to any applicant, for a mixture that would cure almost every ill to which flesh is heir;" but in said formula was an item that could only be had from the party so generously giving the formula and paying a good price for advertising to do so. As Artemas Ward once said, there is a pile of "you scratch my back and I'll scratch your back" and it often shows plainly on the surface. In making tests, it would be advisable to use such articles as are well known, and can be procured anywhere. Pyro, hydroquinone, and eikonogen are here to stay. Others may be like para-amidophenol which was put on the market, and before it had got fairly under way was withdrawn and issued under another form as a ready mixed developer. If we only knew the facts, we might find some old friends masquerading under new names, and "jackaws strutting in peacock's feathers."

I had thought of adding a formula or two when I began this, but the ground has been well covered by many who are much better versed than myself in the mysteries of same, and as they have been published by the score, I suggest taking one article, such as pyro, for instance, making up several styles as advertised and giving them a good test. As to the make of plate, it has nothing to do with it. I assert that any good plate should be worked with any good developer, the

action of the latter being modified to suit the conditions of exposure. Supposing you use pyro, you require really three solutions, viz.:

No. 1. Pyro and sulphite (or oxidizing preventer).

No. 2. Alkali.

No. 3. Restrainer.

With such you can manipulate any good plate. If you can make a normal exposure, under all conditions, your proportions will need very little variation; but it is to be supposed that in the ordinary run, over and under-exposures will be made and these require different treatment. Dry plates vary somewhat, even from same batch of emulsion, if coated on different days; hence, if the user is conversant with his developer and ready for the conditions, he can produce the good results and failures will be reduced to a minimum.

H. S. NUTT.

A NEW IDEA IN EXHIBITIONS.

THERE is no class of picture exhibitions that suffers so much from monotony as the wall exhibition of photographs. In the first place the pictures are usually small; they are unrelieved by color in themselves; there are no frames to separate them one from another, and to brighten the exhibit as a whole. Then, in the last hours before the exhibition opens, there is a frenzied hanging committee wrestling with the problem, "four's into twenty-seven how many times with none over?" And when the exhibition is finally thrown open to the public, and the hanging committee has actually gotten all the stuff into place, what atom of picturesqueness has entered into the *tout ensemble* of the display?

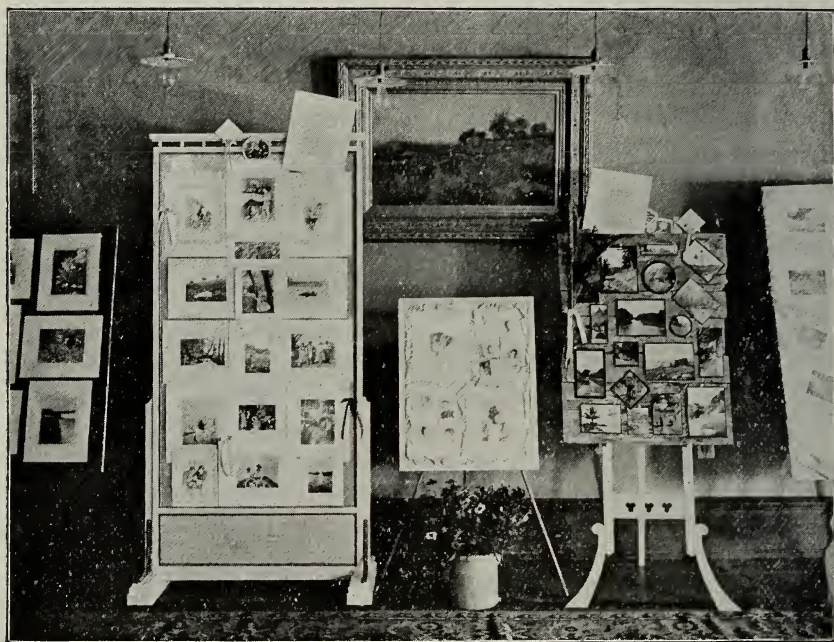
When the committee in charge of the recent exhibition of the "Camera Club of the C. Bi. C." (held in Washington, D. C., June 11th to 14th), entered upon its work, it was resolved at the outset to try an experiment in installation that would be a departure from the conventional wall display. The idea soon crystallized into an "easel and screen exhibition," which turned out to be one of the most successful and beautiful exhibitions of photographs ever held in Washington.

Naturally the committee had to do a deal of talking to explain the details of the scheme. Certain restrictions were laid upon the exhibitors, and certain requirements were rigidly insisted upon. After acceptance of an exhibitor's work, the loose photographs were returned to be placed, according to the individual taste of the exhibitor, upon suitable panels with fabric or *passe-partout* backgrounds, these panels to be presented for exhibition upon easels, or the pictures might be displayed upon folding screens. Drapery accessories, and the use of simple flowers in mass, and of potted plants, in a limited way, were allowed. Certain colors and their shades, however, as red and green, were tabooed, and strong or dark colors were urged to be employed with caution. An outline of the design of the panel or screen, and a hint as to the material and color of the background were required from each exhibitor, the committee giving all advice and assistance in its power towards harmonizing the exhibition in its entirety. The result was a signal success. At 4 o'clock on the day of the reception and private view, the easels began to come in, and the committee assigned space and positions; by 6.30 o'clock the hanging committee (of which, in such an exhibition, every contributor is a member), had finished its

labors. The committee added a few palms and gave a few finishing touches, and one hour and a half later the fortunate ones who had received invitations to the reception and private view were ushered into an exhibition room, which, under a blaze of incandescent lamps, was lovely in the extreme, a picture in itself.

And now for a few details. Mr. Douglas, the President of the Camera Club, had ten landscapes in platinotype, under creamy mats, and mounted in slight frames without glass, these being displayed upon a four-panel Japanese screen, the background effect of which was gray. Portions of the screen were covered with folds of cheese cloth, with drapings of soft fabrics in delicate shades. One potted plant, in bloom, gave the needed bit of color for artistic effect.

The chairman of the committee, your correspondent, showed seventeen landscapes on "Aristo" paper, toned to harmonize with the maroon mounts



used ($\frac{1}{4}$ -inch margins), the background being a panel of lichen-covered fence boards (from an old Nantucket sheep pasture), which was placed upon a white enameled easel. Near it, the same exhibitor had an upright panel, in an enameled frame with heavy base, measuring 3 x 6 feet, upon the gray felt background of which were displayed seventeen examples of genre and portrait work in platinotype. A mass of daisies, 15 inches or more across, stood on the floor between the two panels. This exhibit is shown in the half tone.

Mr. Henry's superb cloud studies in platinotype were shown upon a background of pale blue silk, the folds making a cloud-like sweep downward from left to right, gathered with a simple knot of ribbon at the lower right-hand corner. In its artistic simplicity this exhibit was unique. Mr. Goodrich's background for nine silver prints was a tent of straw-colored crêpe gathered on in upright folds, with an embroidered scarf of creamy silk draped at the top.

Mr. Boteler used a similar fabric, of a dark slate gray, laid on flat, for the

background of a dozen platinotypes of landscapes and mountain scenery. The plainness of the panel was relieved by a festoon of gray Spanish moss, and in the upper left-hand corner a spray of daisies, bound with a broad white ribbon, was used effectively. The base of the easel was hidden by daisies, seemingly growing out of the floor. Mr. Harper banked his pictures on a large upright panel, no background showing, although a bit of ribbon in pale blue was used for color across the top of the panel. Messrs. Greeley and Allen used *passerelout* for their panels, employing masses of flowing drapery in soft tints of India silk, and Mr. Schaaff used a dark maroon oilcloth with morocco surface, bordered with a $\frac{1}{2}$ -inch gilt strip, "half-round." Mr. McAdie's panel of lightning flashes rested on a table, the embroidered cover of which served as drapery, and Mr. McComb used a dark drab felt for background without draperies. One of the most careless and yet effective panels was that of Mr. Olds, his pictures seemingly having been thrown at the panel and pinned where they struck. His color scheme was a light gray, with embroidered scarf for draping. There were sixteen easels and screens in all, upon which were displayed two hundred and ten pictures.

I send a photograph of Mr. Douglas' screen, and my own exhibit which took first prize "for best collection of pictures in several classes." The panel of old fence boards shown on the right also took the first "for most artistic easel or screen and arrangement."

To sum up the advantages of an "easel and screen display" over a wall exhibition: The pictures are shown to the very best advantage as to position and light; the work of every exhibitor stands apart from that of other exhibitors; the exhibition as a whole is artistic and beautiful, and, lastly, the work of the hanging committee, with its vexations and the possibility of "hard feelings" through giving bad positions, is reduced to *nil*.

The Washington "Camera Club of the C. Bi. C." (Capital Bicycle Club) has no patent on this form of display, and hopes that its successful experiment will have followers everywhere.

CHARLES RICHARDS DODGE.

NAMES AND TITLES OF PICTURES.

(Continued from page 192.)

It is a very strange thing that just where Nature seems to have dipped her brush more lavishly, and given us not only more glorious color, but also more fantastic forms, is just that part which most men pass through life without ever really seeing at all, viz., the sky and clouds. True, photography has at present to be content by seizing the form and passing by the color. Yet how few photographers attempt to make pictures of which all or anywhere near all the interest is in the sky.

Yet the poets never tire of looking at the airy face of Nature, and telling of her smiles and tears.

In another short poem there are two very beautiful lines, each of which contains a picture in itself:

"The freighted clouds at anchor lie."—7.

The conception of clouds being kept at anchor opens up quite a new line of

imaginative thought. A few lines further on the scene changes, and we have another of great beauty, most beautifully expressed, viz.:

"The melting tenderness of night."—7.

How often have we not only felt this tenderness, but tried in vain to catch something of it in our camera? I should, indeed, be proud if I could make a print under which those lines might be properly placed.

Then, again, how gloriously grand are many of the effects of wind on land and sea. Sometimes grand and awful; sometimes delicate and sorrowful. For instance, how elegantly does the poet convey to our minds in the line—

"Tremulous leaves with soft and silver lining,"—8,

just the sensation of a gently stirring *aura*.

Or, again, all must feel the pathos which is suggested in these words:

"The vine still clings to the mouldering wall,
But at every gust the dead leaves fall."—9.

A vine, an old wall, a few dead leaves; not much to make a picture of. True, but the poet-artist has done it. Why should not we take courage?

Then, again, take poet-pictures of the seasons. Here is a line which will suggest half a dozen different, and perhaps equally appropriate, presentations of the central thought:

"Autumn, like a faint old man, sits down
By the wayside a-weary."—10.

Herein is expressed the "sobering gladness" which "the old year takes up." What more appropriate for our study and contemplation? And, when these words best express our conception, what sound reason forbids our using them in preference to our own?

But perhaps our thoughts run on to the winter season, when, as we think, there are no pictures to be made. Stay for one moment. The poet sees pictures in winter. Cannot we try and see them also?

Here are some half-dozen (contained in one short poem of a couple of dozen lines), any one of which contains the germ of a picture:

"When winter winds are piercing chill,
And through the hawthorn blows the gale."

"O'er the bare upland
The embracing sunbeams chastely play."

"Where twisted round the barren oak
The summer vine in beauty clung."

"Where . . .
The crystal icicle is hung;"

"Where from their frozen urns, mute springs
Pour out the river's gradual tide."

"Shrilly the skater's iron rings."—11.

Or, yet again, here we have a quartet of pictures in as many lines:

"The day is ending,
The night is descending;
The marsh is frozen,
The river dead."—12.

7.—Longfellow, "It Is Not Always May." 8.—Longfellow, "Flowers." 9.—Longfellow, "Rainy Day."
10.—Longfellow, "Autumn." 11.—Longfellow, "Woods in Winter." 12.—Longfellow, "February."

To turn now to domestic life and relationship. Commonplace events of daily life, when touched by the artist's magic hand, take on a new life. In these lines :

"Ere the evening lamps are lighted,
Shadows from the fitful firelight
Dance upon the parlor wall,"—13.

we have a splendid suggestion. The imagination seems to spin us away into phantom-land in a moment. Here is a chance for a picture-maker.

But, perhaps your thoughts are out in the fields—away at the old home. Your thoughts are vivid and your picture is clear in your mind's eye, yet you lack the words to unlock your thoughts.

"The old house by the lindens,
Stood silent in the shade ;
And on the gravelled pathway,
The light and shadow played,"—14.

Or perhaps it is out beyond the homestead, and you recall the time when, for the last time, you saw harvest being gathered in :

"When the summer harvest was gathered in,
And the ploughshare was in its furrow left,"—15.

May be that for old sweet memories' sake you have again visited the scenes of your happy childhood, and found here and there relics, old favorite corners,

"This rustic seat, in the old apple-tree ;"—16.

Possibly your children's children still play there ; or,

"Abandoned, hangs the vacant swing,"—16.

So, lingering long around the familiar scenes, the hands of time seem put back for a while, and the day speeds on all too quickly before you can snatch mementoes enough with your shadow-catching box.

"The day, with all its hours of light,
Was slowly sinking out of sight,"—17.

Or perhaps a passing shower has recalled you to time present, and, seeing the rainbow span the well-known landscape, your thoughts

"Follow the water drops,
Down to the graves of the dead,"

or

"On the bridge of colors seven,
Climbing up once more to heaven,
Opposite the setting sun,"—18.

Thus at every point the poet has some new and beautiful thing to show us, to teach us.

"Tell me not, in mournful numbers,
Life is but an empty dream,"—19.

There is beauty everywhere, could we only see it. The question of our seeing or not seeing is very much more a matter of whether we want to see or not than we, perhaps, are sometimes apt to imagine. This much, however, is certain, that nothing worth having can be had for nothing. Possession of this

13.—Longfellow, "Footsteps of Angels." 14.—Longfellow, "The Open Window." 15.—Longfellow, "Indian Hunter." 16.—Longfellow, "To a Child." 17.—Longfellow, "Orion." 18.—Longfellow, "Rain in Summer." 19.—Longfellow, "Psalm of Life."

desirable power of seeing means time, patience, observation, application, and, above all, sincerity to our own feelings.

“Art is long and Time is fleeting.”—19.

Now, if the spirit of Hiawatha still hovers over this great continent, it is time to remind ourselves that great things are thence expected ; for

“Thus it was that Hiawatha,
In his wisdom, taught the people,
All the mysteries of painting
All the art of Picture-Writing.”—20.

I suppose it is true that “the poet is born, not made”; yet, let us hope this is not quoted as any argument for indolence, avoidance of self-culture. I am satisfied that no genius, however endowed, ever reached Olympian repose without having had to climb the ladder the every round of which demanded work and application.

“Let us, then, be up and doing,
Still achieving, still pursuing,—19.

and

Learn to labor and to wait.”—19.

Rev. F. C. LAMBERT, M. A.

OUR POSING STUDY.

We submit to our readers a posing study from the studio of Hemperley, of Philadelphia. It will, we feel sure, commend approval for its grace and ease.



We were favored with a whole batch of prints by Mr. Hemperley; all were of the finest quality, showing the delicate touch of the master hand. In Volume VII of the “International Annual,” Mr. Hemperley will be well represented.

AN INTERESTING SUBJECT.

CAPITAL subjects often turn up when least expected, and he who can see a picture where there is a picture is the man who achieves success in photography. The half-tone that we reproduce here is from a print kindly sent to us by W. A. Beers, of New Haven. Mr. Beers is well known throughout Connecticut, and when we say that he has been at his present location for thirty-nine years, and has now a gallery equipped with the most modern apparatus, we have said all



that is necessary as to his qualifications. Writing anent this picture, "The Peanut Vendor," Mr. Beers remarks: "The Italian boy called to sell peanuts a few days ago, and my operator, Mr. H. Sequine Hayes, being struck with the boy's general appearance, made a negative of him at once. It is a charming success. The picture is printed on American Aristo paper. The negative was made in one second under a peculiarly constructed light. The skylight is 10 x 14, some 12 feet high, sloping down to about 7 feet, meeting an end or side light which comes to within 12 inches of the floor. Top and side light are con-

tinuous, the junction being made of bent glass. The glass is double thick and finely ground; the frame is a light iron structure."

We agree with Mr. Beers that the picture is a charming one, and are glad to be able to present it to our readers.

JOTTINGS FROM GERMANY.

Copper Etching.—Herr Cronenberg, one of the German authorities on photo-mechanical printing, writes regarding copper etching as follows: "The idea is generally prevalent that copper etchings are not suitable for the printing press. Numerous experiments have proved that they are. While a copper plate is considerably dearer than a zinc plate, copper has many advantages that make its use preferable. In this process no expensive ruled glass is required, the etching process is considerably quicker and the grain has a more modulated effect than can be obtained through a ruled glass. The process is roughly as follows: A print on pigmented paper is made from a clear negative which is rich in contrast, and this print is transferred to a grained copper plate. The degree of fineness of the grain is entirely under control, and different degrees suit different subjects. After transfer, the print is hardened by immersion for ten minutes in alcohol, dried, varnished around the edges and etched in four perchloride of iron baths. This etching process should be finished in from ten to twenty minutes. The plate is then well cleaned, rolled in and covered again with varnish. A final etching is given in a chloride of iron bath of 30 degrees Baumé, in which the plate may be left for from six to seven hours, after which it is thoroughly cleansed."

Orthochromatic Photography.—Dr. Eder and E. Valenta have made some interesting experiments with some new color matters as optical sensitizers for gelatino-bromide of silver. The rhodamine group, being related to the eosin group, has a strongly sensitising action. The more these colors approach a blue shade, the more sensitive they will make the plate for the less refractive end of the spectrum. The aniline factory at Baden manufactures a coloring matter which has been put on the market under the name of rhodamine 3 b, and which dissolves in water, giving a violet color at orange-red fluorescence. The plates are bathed in the following solution:

Rhodamine solution (1 : 500).....	I to 2 c.c.
Ammonia.....	I "
Water.....	100 "

The sensitising action has its maximum in the light green and extends towards the orange ($D \frac{1}{3} C$). Of better action is another rhodamine, the tetrachlor-tetraethyl-rhodamine chlorhydrate. This gives a more powerful sensitising for the yellow, green and orange ($D \frac{1}{2} C$). A very blue coloring matter is the nitrilorhodamin. The orange sensitiveness of these color matters is not so great as that of cyanin, but they have the advantage of not greatly reducing the general sensitiveness of the plates. The nitrilorhodamin may have an important application in photography in natural colors.

Sulphite of Soda.—Most of the ordinary sulphite of soda contains carbonate of soda. This contamination is not of much account unless using metol, when

fogging will probably occur. All mercantile sulphite of soda contains sulphate of soda (Glauber's salts), for sulphite readily absorbs oxygen from the air, especially when in solution. If a sulphite solution be exposed to the air for fourteen days, only a trace of sulphite will be found, the bulk being sulphate or Glauber's salts.

Aurine in Acid Fixing Bath.—Paul Baltin controls the acid fixing bath by the addition of a little aqueous solution of aurine. After constant use, the bath becomes neutralized and finally alkaline. At this point the aurine regains its color, tinting the bath red. The solution is acidified, when the color disappears. This color reaction takes place with the slightest excess of alkali and is therefore a valuable test of the acidity and efficiency of the acid fixing bath.

THE *Süddeutsche Photographen Zeitung* is a new journal, published in Munich and edited by G. W. Emmerich. The first number appeared in April.

The Curling of Films.—Herr Balagny gives the following formula for preventing curling :

Place the films, after washing and drying, for one hour in a mixture of—

Alcohol.....	500 c. c.
Glycerine.....	35 “
Water.....	500 “

and remove the superfluous moisture with a soft sponge.

Aluminium as a Reducing Medium.—Professor Neesen, in his report to the Physical Society, says that aluminium displays its reducing power best when previously washed in a diluted potash lye. If sheet aluminium, after careful cleaning, is placed in a cyanide of silver solution, the surface will remain bright. But if the same is first immersed in the potash lye until gas formation, and then, in a still moist state, is put into the silver solution, it will receive at once a silver coating. In the same manner, a precipitation of mercury, lead, tin or copper is obtained. It is clear that the adhering potash by itself does not effect the precipitation; glass moistened with potash will not produce a precipitation of the silver. So far, it was only known that aluminium moistened with potash would amalgamate directly with metallic mercury. The amalgamation takes place, therefore, also by the immersion of the aluminium—treated and moistened with potash—into the solution of any mercury salt. This reaction furnishes an extremely sensitive medium for the recognition of mercury. The amalgamized aluminium, exposed to the atmosphere, shows a strong formation of oxide of aluminium in the shape of small hairy formations or small white spots. If aluminium, treated as above, with potash, is immersed in water which contains bichloride of mercury, the white spots will very soon make their appearance after taking it out of the water and drying. This proves that the aluminium has absorbed mercury. Heat promotes the reaction.—*Phot. Mittheilungen.*

Vignettes on Dark Grounds.—To make a vignette with a dark ground, use a deep black background and focus the subject sharply. Insert in about the center of the camera bellows a well-fitting piece of cardboard, in which a vignette

of the desired shape has been cut. This vignette must, of course, be inverted.

Retouching Varnishes.—According to Lainer, many ether-benzole varnishes lose their efficacy by the rapid evaporation of the ether, the benzole being left in excess and the resin precipitated in a powdery form. He recommends the following formula :

Powdered sandarac.....	10 grams.
Gum dammar	3 “
Ether	100 c.c.

Add to this solution 50 to 60 c.c. of benzole. Lainer also recommends a solution of 5 grams of asphaltum in 100 c.c. of toluol. This can be used for thin negatives, and may be worked with a lead pencil or pen.

Photo Swindlers.—E. Fishel, in *Photographische Mittheilungen*, writes : “ For some time a gang of swindlers have been thriving at the expense of photo-stock dealers. They give orders, on gorgeously printed letter-heads, for dry plates, lenses, cameras, paper, etc., and once in possession of the goods, sell them at nominal prices. When the bills are sent in, the birds have flown. Many firms in Germany, France and England have been victimized and have been hitherto unable to bring the guilty parties to account.” The same gang has endeavored to work America, but so far without success.

Sensitive Arsenic Compounds.—R. E. Liesegang, to whom the greatest credit is due for work on the photo-chemistry of the metals, has recently been experimenting with the compounds of arsenic. While his observations may be only of interest from a theoretical point of view, they certainly extend our knowledge and may lead to more valuable results. If a solution of sodium arsenate is applied to sized paper, this will be found but slightly sensitive to light. But if the paper is now immersed in a solution of citric acid, a colorless preparation will be obtained which becomes yellow even in diffused daylight, and yellow-brown after an exposure of fifteen minutes. In the dark it remains quite colorless. Oxalic acid produces the same result, while formic acid gives a paper of twice the sensitiveness. Those parts of the exposed paper which have been acted on may now be developed with various compounds. Diamidophenol gives a grayish brown image ; para-amidophenol a yellow picture.

OBITUARY.

CHARLES D. FREDRICKS.

WITH the deepest regret we record the death of Charles D. Fredricks, for many years one of the leading photographers of New York. Mr. Fredricks was born in New York in the year 1823, and in his early youth his father sent him to Havana, where he acquired a knowledge of the Spanish language. In 1843, fired by the glowing accounts of his brother's success in Venezuela, he sailed for Angostura, on the *Orinoco*, with an assorted stock of goods, including a daguerreotype outfit, and while at this place made a small fortune with his

camera. He decided to travel, and visited the islands of Tobago and St. Vincent. Being desirous of visiting Brazil, he went up the Orinoco and down the Amazon, a nine months' voyage of wild adventure, hardships and exposure. Returning to New York, the love of adventure proved too strong, and the next year saw him back again at Para, where he established a gallery. After traveling through Brazil, he settled for a year in Buenos Ayres. The year 1853 saw



him in Paris, and the end of the same year he was again in New York, entering into partnership with J. Gurney. This partnership was dissolved in 1855, when Mr. Fredricks opened a gallery on Broadway, opposite the Metropolitan Hotel. A branch house was started in Havana, and has been successfully continued. Fire necessitating a removal of the New York house, he opened up on the corner of 9th street and Broadway. Here he personally conducted the business,

always kind and genial. He died on Saturday, May 26th. The funeral services were held at Trinity Church, Newark, and the body was conveyed thence to Greenwood Cemetery. Colonel Wilcox, E. B. Barker and many of his old friends, including several members of the Old Guard, rallied to see the last of one who had been a faithful friend and a valued comrade.

PLATINUM TONING FOR MATT-SURFACE COLLODION PAPERS.*

THE collodion or "Aristo" papers are meeting with great favor in amateur as well as professional circles. Matt-surface collodion papers give good prints showing much delicacy in the half-tones and being retouched with much facility. Pictures on these matt papers resemble those on the so-called "salted papers," and the printing and toning is the same as with ordinary "Aristo" paper. These matt papers, toned with a platinum bath, as used for salted paper, will assume a gray to black tone, though the ordinary platinum toning baths (water, potassium chloro-platinite and nitric acid) have the disadvantage that prints toned therein will change to a yellow color in the half-tones during fixing. The following method is easy of application, and is free from this defect. The prints must be made from negatives rich in contrast, and the printing should be carried further than usual. They are washed to remove excess of silver and placed in the following platinum toning bath:

SOLUTION A.

Sodium ortho-phosphate.....	50 grams.
Water	500 c.c.

SOLUTION B.

Potassium oxalate.....	100 grams.
Water	500 c.c.

A and B are mixed and 100 c.c. of this stock solution are mixed before use with 1 c.c. of potassium chloro-platinite solution, 1 to 10.

In this bath the prints rapidly assume a deep black color. When the tones are grayish black by transmitted light, the prints are placed in a hypo bath, 1 : 10. The gray tone will change to an agreeable brown, similar to that of platinum prints developed with mercury salts.

If black tones are desired, the prints are placed in a combined toning and fixing bath instead of into hypo alone. The same results, with perhaps more bluish gray tones, are obtained if the prints before treatment in the platinum toning bath are placed in an ordinary borax chloride of gold toning bath, as generally made for albumen prints, and left there until they have assumed a purplish black color.

E. VALENTA.

FEW of our readers recognize the advantage of using a fixing bath, which, in addition to removing the unaltered silver salts, takes out all the stain produced by the use of pyro developer. Andresen's fixing salts have this property, and further, the bath remains clear during as long a period as it is desirable to use a fixing bath.

* See also "Platinum Toning," by Lyonel Clark, Anthony's Series, No. 29, page 82. Ed.

OUR ILLUSTRATION.

STUDIO WORK BY LANE, BROOKLYN.

WE are particularly pleased with the set of pictures that Mr. Lane has prepared for this, the midsummer number of the BULLETIN. The whole collection is indicative of careful, painstaking work, and is interesting in that it is the work of a man who by studious effort has risen from the ranks. Mr. Lane's photographic career began in 1861, and he has the reputation of being one of the best retouchers living. Two years with Gutekunst and fifteen with Pach Brothers is an honorable record.

At the recent joint exhibition of the Brooklyn Institute and Academy, his frames of carbon and "Aristo" prints excited considerable admiration. The coming convention will see an exhibit from his gallery that will show that Brooklyn is not wanting in excellent photographers. Mr. Lane is a firm believer in the possibilities of photography and deplores his inability to reach perfection. He says: "I have long been impressed with the conviction that the capabilities of photography were far in advance of our attainments, and this is especially the case in



portraiture. Perhaps nowhere in the realms of art (and photography is an art) can we find an occupation that falls as far below its possibilities. The painter may fail or produce but an ordinary result by reason of the time and labor required to produce that which his genius and inspiration has conceived and clearly perceives; but we, by the touch of a curtain and the movement of a hand, may in a moment depict the grace, life and loveliness that months of labor by the painter can barely imitate. Why, then, is there so much of the grotesque in our productions? Why is there a lack of brotherhood between us, a scarcity of that mutual assistance so much needed. Could we become in earnest a fraternity, could we be really instructors one of the other, we would as a body rise to a higher plane, and find in our daily occupation that pleasure which the striving for, and attainment of, highly artistic results always bring. Our stiff, commonplace productions would be replaced by graceful artistic photographs."

[From *British Journal of Photography*.]

SWING-BACKS AND THEIR USES.

WHEN we reflect that there are now several thousands of cameras in use in which the sensitive plate is perforce, and as a necessity of their construction, compelled to be at a right angle to the axis of the lens—for only a small fraction of the hand cameras have swing-backs, and when we further reflect that among the innumerable amateurs who are daily entering the ranks of photographers, and are ignorant of what a swing-back to a camera is and what purpose is served by it—some remarks upon its nature, its use and abuse, will not be out of place at the commencement of the out-door photographic season.

For such indoor work as sitting figures, the swing-back is not now of the same consequence as it was some time ago. In former times, when lenses of a large aperture had to be employed, and a sitting figure was the subject, if the head was placed in sharp focus, the knees, and any hand resting on the knee, would be quite indistinct and out of focus. The only remedy for this was to swing the upper part of the ground-glass away from the lens so as to sharpen the knees without disturbing the focusing of the head. This, when the point of sight was at no great distance from the sitter, necessarily caused the knees and hand to be depicted on a scale larger than that of the head, and gave rise to animadversions, especially by ladies, relative to the tendency of photography to make large and unsightly hands. With a better art education, lenses of proportionately longer foci, less aperture, and more sensitive plates, errors of this nature are largely disappearing, and the swing-back of the portraitist is getting more and more into disuse.

It is in the photographing of architecture where its advantages are most apparent. It is an absolutely indispensable condition, when taking a building free from distortion, that the ground-glass shall be vertical, inclining neither to the top nor to the bottom. This condition is secured when the camera is placed quite level; but it usually happens that, owing to the proximity of the camera to the ground, 5 feet being a usual height, only a limited vertical angle, quite inadequate to show the top of the building, can be included. The first obvious remedy for this is to direct the camera upwards, so as to have the whole included; but, were a picture now taken, the perpendicular sides would be found to converge to such an extent as to produce more or less hideous distortion, an inevitable concomitant of the law we have alluded to, viz., that the sensitive plate must be in a vertical position. If there is a swing-back to the camera, and the ground-glass is brought by its operation into verticality, a remedy is at once provided, and the building is once more free from distortion, subject to this, that it is a little squatter than it ought to be, although this will scarcely be noticeable. The top and bottom will also be out of focus if the center is sharp, but this is remediable by the insertion of a small diaphragm, which gives a degree of depth of definition sufficient to make every part practically sharp.

A more theoretically perfect manner of obtaining an undistorted view of the building would be to level the camera, one with a rigid back sufficing, and slide the lens up as close to the top of the camera front as possible. This, however, can only be effectively done when the lens includes an angle wide enough to permit of this being done without showing the circle of darkness that limits the utilizing of this system.

But even this may be accomplished with a lens that includes an angle of view so narrow as just to cover the plate and no more. To do so it is only necessary to have the lens mounted in such a manner that, when by the sliding camera front it has been pushed up to the top, its axis is made to lie in the direction of the center of the plate. Numerous mechanical appliances for effecting this end have been published, probably the simplest of them consisting of the hinged front, now so common in many of the portable bellows-bodied cameras.

One very excellent use to which a swing-back can be put in landscape work is to secure the sharpening of shrubs, flowers, or other objects of attraction and beauty in the foregrounds of pictures. Unless a very small stop is used in the lens, a distant scene and a foreground object are not rendered with equal sharpness. To ensure this, the sensitive plate must be placed obliquely to the axis of the lens, its top, on which the foreground is depicted, having to be moved away from the lens often to a considerable extent. When a scene is viewed in Nature, the foreground, from its proximity to the observer, always asserts itself strongly, and, unless otherwise objectionable, so ought it to be in a photograph. The tilting of the plate backwards in the manner suggested permits of this being done in the most effective manner.

If, with a rigid camera, it is found necessary to point it upwards in order to get in the top of a building, the negative obtained under these circumstances will certainly show the distortion of convergence. But this need not very greatly distress the photographer, provided it is otherwise good and sharp, for from this distorted negative can be produced another almost equally as good as the original, and from which the distortion is entirely eliminated. All that is necessary is to make a contact transparency from the original, and then make a negative from the transparency by means of the camera, swinging the back in doing so until the converging lines in the transparency are brought to a state of absolute verticality on the ground-glass, after which the exposure is made. While experimenting in this direction, we have found a lens of short focus better for the purpose than one of longer focus, and let it not be forgotten that, when anything is being copied its own size, the focus of the lens is for the nonce lengthened to twice its solar focus.

If the operator has only a solid-back camera when making the rectified production of the distorted negative, then must such negative be placed in a leaning position in front of the camera, and not squarely. In either case a very small diaphragm should be used with the lens.

THE PHOTO-CHEMISTRY OF TUNGSTEN.

In a paper by R. E. Liesegang, in *Photographic Work*, after references to other recent work, it is stated that gelatinized paper immersed first in a solution of tungstate of soda, then in dilute sulphuric acid and afterwards washed, was turned blue by exposure for a few minutes to sunlight. Sensitiveness is increased by treating the paper before exposure with certain organic acids. Tartaric acid gave a paper nearly as sensitive as chloride of silver paper, giving a tint and intensity much the same as cyanotype, and the color does not fade so quickly as when tartaric acid is not used. The prints may be toned with silver.

SOCIETIES.

SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.—Officers: President, R. A. B. Dayton; Vice-President, F. C. Elgar; Recording Secretary, A. P. Schoen; Corresponding Secretary, T. J. Burton; Treasurer, C. C. Roumage. From the Society's *Journal*, we extract the following:

"The process for producing very fine screens for focusing, by precipitating barium sulphate upon the film, has been found practicable.

"Chloride of aluminum in 5 to 12-grain solution, has been found to act very rapidly and effectively in hardening the gelatine film after development and fixation, and to assist materially in elimination of hypo from the same.

"To find the amount of silver on dry plates, take a box of quarter plates and divide into four lots of three. Place the plates in boiling water to dissolve the film, or strip it with hydrofluoric acid and dissolve the film in boiling water, add $\frac{1}{10}$ of the volume of nitric acid, allow the silver salts to settle, decant the clear liquid, wash the precipitate, collect and dissolve in as small a quantity of hypo as possible, and precipitate the silver with ferrous oxalate or hydroxylamine; collect the silver, wash, dry and weigh. It would, of course, be possible to treat the silver salts at once with a developer and weigh the silver.

"To focus enlargements with working stop, take an ordinary dry plate, fix in hypo, wash well and dry. Then, with an ordinary draftsman's pen charged with India ink, rule on it horizontal lines as fine and black as possible, about one-eighth inch apart. This makes a focusing plate. For use, set up your enlarging apparatus and insert negative in its place. Having got the screen in position according to size of enlargement, take your negative out of its carrier and in its place insert the "focusing plate," when you will find that the fine black lines can be focused with ease on the white screen. This done, replace the negative and expose, and you will find the enlargement as sharp as you can get it.

CALIFORNIA CAMERA CLUB.—A special meeting of the California Camera Club was held Tuesday, May 29th. The resignation of Mr. Geo. W. Reed, for the past two years treasurer of the club, was received and accepted with great regret. Dr. E. G. Eisen was unanimously elected his successor.

A set of slides from the London Lantern Society was shown. They were greatly enjoyed by the members present, a series by Mr. A. Captain being especially admired.

C. BI. C. CAMERA CLUB.—Exhibition held June 12th to 14th. Judges: Messrs. Smillie, Max Haüsmann, Max Weyl. Awards: For the best collection of photographic work in several classes, one first award, to Mr. Chas. Richards Dodge.

Portrait Class.—1st, J. H. Harper; 2d, Charles R. Dodge; Hon. Mention, Charles H. Schaaff.

Genre Class.—Charles R. Dodge.

Landscape Class.—1st, H. G. Douglass; 2d, F. M. Boteler; Hon. Mention, D. E. McComb.

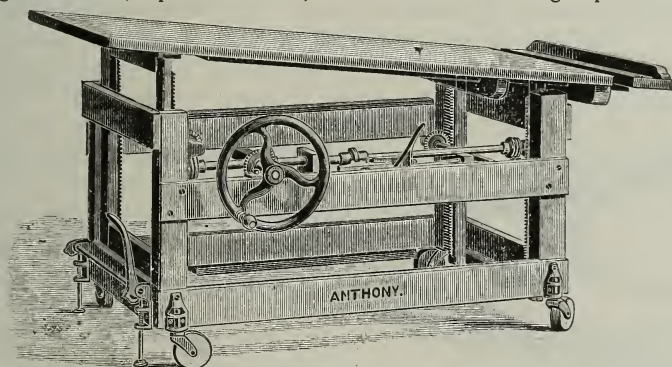
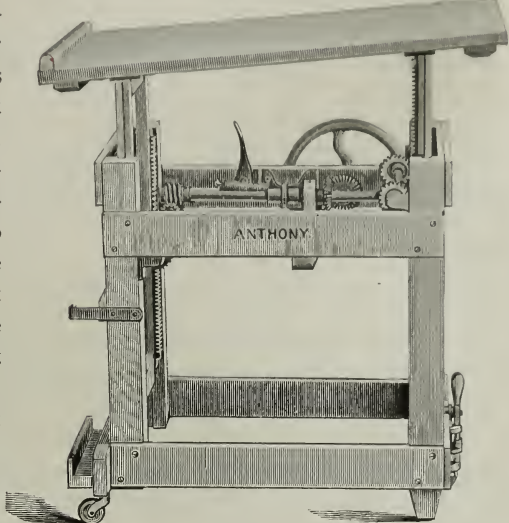
Fourth Class (Interiors).—E. P. Goodrich.

Technical Work.—1st, A. J. Henry; 2d, A. McAdie.

Marine.—Charles R. Dodge.

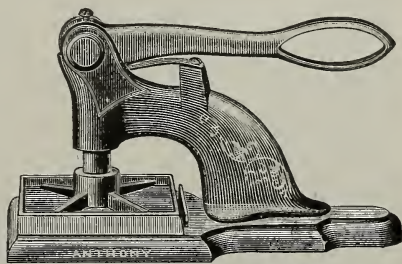
IMPROVEMENTS IN APPARATUS.

THE great trouble with studio camera stands has been their unwieldiness and the general difficulty of handling them under any but ordinary circumstances. In the two cuts we show the latest and most complete stand, the New York camera stand. No. 1 is a compact, strongly made stand, designed to carry any box up to 11 x 14. The noticeable feature about it and a point wherein it possesses considerable advantage over all others, is the fact that the wheel is at the side, and therefore always handy, and that the same wheel that raises and lowers the top as a whole, also serves to tilt it. A simple movement of a lever changes the gearing. The price is \$16.50. The No. 2 stand is for larger cameras, up to 20 x 24, and has an extending top. There is no

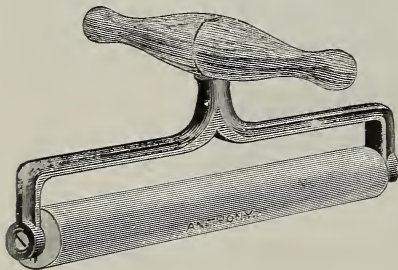


unnecessary machinery about it, and it does not fill up half the studio. The price is \$21.50.

THE Perfect photo print mounter is a new instrument designed for the rapid mounting of cabinet photographs. No blotters or rollers are used. It is based on an entirely novel principle, a flexible pad being brought down upon the print with a firm even pressure, preventing sliding, and expelling all air bubbles. The edges of the mount are kept perfectly clean, and the whole operation is simple, cleanly and rapid. The print is pasted and laid on the mount. The latter is then placed under the pad, between the guides, and by a pull on the lever the print is pressed into contact with the mount. The price is \$5.50.



THE simplest and most compact piece of apparatus for correctly timing exposures is Wynne's infallible exposure meter. The four conditions governing exposure are all taken into account. These conditions are: (1) the intensity of the light which illuminates the subject; (2) the diaphragm or stop employed; (3) the character of the subject; (4) the sensitiveness of the plate used. The first is determined by the time taken for the sensitive paper in the actinometer to color to standard tints. This varies from two or three seconds to a minute or so, and is called the actinometer time. There are two tints in the actinometer, the lighter tint being one-fourth the darker or standard tint, and being used in cases where the light is very weak. The instrument is marked with the diaphragm numbers. A table of the relative sensitiveness of the various brands of plates is supplied with each instrument. To calculate the correct exposure, one movement only is necessary. The movable scale of the instrument is turned until the actinometer time in seconds upon the exposure scale is opposite the diaphragm number of the plate. The correct exposure in seconds and fractions of seconds will be found against each stop from the largest to the smallest. As an example we will suppose that we are photographing an ordinary landscape on a slow Record plate. The sensitiveness of the plate is given on the table as $F/45$. The paper, we will presume, took twelve seconds to darken to the standard tint, and the diaphragm we are using is $F/16$. Move the scale until twelve is opposite $F/45$. Then, against $F/16$ will be found the correct exposure, one and one-half seconds. The price is \$2.50.



For the mounting of prints of all sizes the Anthony squeegee roller will be found particularly adapted. It consists of a single roller, made of the finest velvet rubber, fastened to a handle. When in use for mounting, the handle is set at right angles to the roller. For packing it is laid parallel to the roller. Price, 75 cents.

THE Barker cameo press has been remodeled, and guides added, to ensure the print being in proper position. Three dies are furnished with each instrument, and the price is only \$9.

TABLE OF CONTENTS.

	PAGE		PAGE
A FINAL LETTER FROM SECRETARY RÖSCH.....	214	OBITUARY (CHARLES D. FREDRICKS).....	236
A NEW IDEA IN EXHIBITIONS, by Charles Richards Dodge.....	227	OFFICIAL PROGRAMME (P. A. of A.).....	216
AN INTERESTING SUBJECT.....	233	OUR ILLUSTRATION.....	239
DALLMEYER'S TELE-PHOTO ATTACHMENT, by D. L. Elmendorf.....	223	OUR POSING STUDY.....	232
DEVELOPERS, by H. S. Nutt.....	225	ORTHOCHROMATIC PHOTOGRAPHY.....	210
ECONOMICAL DEVELOPMENT WITH PYRO.....	213	PHOTOGRAPHY IN COLORS, by Corwin Gitchell.....	221
IMPROVEMENTS IN APPARATUS.....	242	PLATINUM TONING FOR MATT-SURFACE COLLODION PAPERS, by E. Valenta.....	238
ITEMS OF INTEREST.....	218	SOCIETIES.....	241
JOTTINGS FROM GERMANY.....	234	SWING-BACKS AND THEIR USES.....	240
LETTER FROM J. C. STRAUSS.....	216	THE HAND CAMERA.....	211
LETTER FROM TREASURER SCHNEIDER.....	215	THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.....	209
NAMES AND TITLES OF PICTURES, by Rev. F. C. Lambert, M. A.....	229	THE PHOTO-CHEMISTRY OF TUNGSTEN.....	241
		THE ROLL-HOLDER QUESTION.....	213

ANTHONY'S Photographic Bulletin.

EDITORS :

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

FREDERICK J. HARRISON.

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THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA. MINUTES OF THE CONVENTION HELD AT ST. LOUIS, JULY 24th TO JULY 27th, 1894.

THE Fourteenth Annual Convention of the Photographers' Association of America was called to order at 10 o'clock by President Adam Heimberger, who immediately introduced Mayor Walbridge, and the latter delivered a short address of welcome. The Mayor told the delegates that if the thoughts of the St. Louis people could be photographed there would be a cordial welcome produced on the plates. After a short response, the President then presented his annual address, beginning by paying a handsome tribute to the hospitality of St. Louis.

PRESIDENT'S ADDRESS.

To the Officers and Members of the Photographers' Association of America :

"LADIES AND GENTLEMEN,—It is with commingled feelings of pleasure and pride that I am permitted to greet such an intelligent and progressive body of photographers upon the occasion of the Fourteenth Annual Convention of the Photographers' Association of America. It is a pleasure to renew old friendships and to contract new ones, and it is a source of great pride to me to know that I have been chosen to fill the highest office within the gift of the Association, and am thankful to an allwise Providence that I am permitted to preside over your deliberations in the great convention city of St. Louis. In these times of great financial depression it is indeed gratifying to witness the coming together of so many devotees of the photographic art, and I feel assured, from what I have been able to glean through correspondence with the fraternity, and from members of the Executive Board, that but for the very stringent times which have prevailed for the past eighteen months, and still prevailing, we should have been able to count a far greater number present. Great things are expected and looked for from the executive officers of this Association, and, in a measure,

rightly so, but they will ever prove powerless for good without the full co-operation of the members of the Association.

This Association, while it is the greatest of its kind on earth, still it ought to more generally enlist the favor of photographers throughout the United States, and by proper management, and wise and judicious legislation, be made to increase the membership much more rapidly.

The outlook for the Association was not very promising when the present Board came into office, and it had been somewhat pretty generally predicted that the Association would not survive another year, that the death knell had already been sounded, etc., but when St. Louis was nominated for holding the fourteenth Convention new life seemed to flow in the veins of the members. The mere mention of the name St. Louis acted electrically upon the assembled photographers, and all doubts, if any really existed, as to the future life and usefulness of this Association were immediately dispelled, and we are here to-day to renew the strong ties of friendship, and in a happy frame of mind partake of the bounties of our whole-souled, hospitable St. Louis brethren.

It is a truism that in union there is strength, yet in our banding together it will be wise not to permit that strength to deviate from its legitimate channel. It has been the endeavor of some to enlist the influence of the Association in the vain attempt of regulating the price of photographs. Might as well try to stay the waters of the great Mississippi; dam it up, and an overflow of exceeding great damage will result. Obligate the members of this Association to a specified price, and they will either have to violate that obligation or starve. Cheap prices and cheap work are two different things; the former will always prevail, more or less, according to the surroundings and business tact of the individual photographer; the latter is gradually giving way in the minds of the people, and a better grade of work is being appreciated and demanded, and each of us should see to it that we are prepared to meet the demand for a higher standard. Photographers should not be content to occupy a lower plane in art matters than that possessed by their patrons. Where such proves the case there will be none but the cheapest grades of work called for, and that at the lowest price prevailing.

Much has been said concerning a permanent home for the Association. As greatly as such a thing is desired, there is one great obstacle in the way of accomplishing the result, and that is location, which cannot be selected to suit all parties. If in the east, the west will ignore it, and *vice versa*. A middle ground might harmonize conflicting opinions, but it is doubted by many.

Our country is very large, and it is claimed by some that, to give all an equal chance, it is best for the Association to continue in a migratory manner.

The subject of fire insurance for photographic studios is raised every year, but nothing comes of it save a few windy remarks. The journals occasionally publish suggestions for mitigating the evils complained of, but even this takes little root in the minds of the members.

The Board of Directors have deemed it advisable this year to make some radical changes in the rules governing the art display and manner of awards, which, it is hoped, will meet with the approval of the members and prove beneficial. It has been a conscientious effort on the part of your officers to devise ways and manner of accomplishing the end for the best good of every member of the Association. Mistakes, undoubtedly, have been made, but

they constitute mistakes of the head only, and it is my firm conviction that each officer has conscientiously endeavored to perform the duty assigned him to the best of his ability, and if the incumbent—your humble servant—proves anywhere near as successful and acceptable as his honored predecessors, he will feel highly gratified. Before concluding, I desire to call your attention to the unmistakable fact that members attending these conventions have strongly condemned the usual practice of sitting out the reading of long and technical papers, saying, "We can read them in the journals," and hie themselves off to examine the various exhibits, and instead of a good-sized audience, empty benches greet the member with a paper to read. There are several causes for this state of affairs, one which I may mention; not every one who can write well can read well, *i. e.*, has a voice with sufficient volume to be heard beyond the front row of seats, when it naturally becomes a bore to those who cannot hear, and vacant seats are the result. Again it often happens that the member preparing the paper does not express himself as concisely as he might had he given the subject more thoughtful care, as it often happens that the paper is prepared but a day or two before leaving home, in which case it is liable to become tedious. There are other causes which have tended to make the reading of papers uninteresting to the members, but I will not take up your time to enumerate them. Your Executive Committee have, therefore, departed, this year from the usual custom. I would recommend that a sum of money be set aside for the purpose of procuring competent persons to give practical demonstrations in the different branches of our art, if you think the plan a feasible one. A man competent to answer questions that may be put to him. This plan would, I think, at least draw out ideas from the members, which in itself would prove beneficial, and good would accrue.

Not desiring to become wearisome, I will not occupy your time further, save to say that it gives me great pleasure to welcome you one and all, and I trust that not one member shall return home feeling that he has not been benefited by attending this Convention. I thank you for your kind attention."

Communications were read by Secretary J. Ed. Rösch, among which was a letter from President Boyd, of the Merchants' Exchange, extending an invitation to the delegates to visit the Merchants' Exchange, either individually or collectively, any day from 9 A.M. to 1 P.M. Also the M. A. Seed Dry Plate Company sent an invitation to all delegates to take a special train at the foot of Olive street at 1.30 P.M. for a complimentary trip to its dry plate factory.

A cordial invitation was also extended by the Cramer Dry Plate Company to visit their works in a body Wednesday afternoon at 2.30 o'clock.

A despatch was read from Bradfish & Pierce, Bay Ridge, N. Y., as follows: "We give up space; unfortunately cannot be represented on account of illness. (Signed, Bradfish & Pierce)." Also from George H. Hastings, Boston, Mass.: "I deeply regret my inability to be present at the Convention. May wise counsel and brief legislation make this meeting a memorable one in the history of the Association."

The following were appointed a committee to nominate officers: F. A. Place, Chicago; S. L. Stein, Milwaukee; Jack Becker, Cleveland, O.; J. C. Strauss, St. Louis; Tom Pattison, New York.

Selection of next meeting place was laid over until the afternoon session.

The following ten gentlemen out of fourteen were selected as judges by the



From negative by C. Klary, Paris, made with Williams Flash Machine.

Convention. The President appointed Guerin, of St. Louis; Radgely, of Louisville; Clark, of St. Louis, to act as tellers. Vote resulted as follows: D. Thompson, 105; W. J. French, 112; C. Moore, 105; C. B. Core, 126; E. E. Sanger, 104; A. J. Roe, 100; J. Brittingham, 117; J. N. Doerr, 118; A. J. Rösch, 115; L. G. Biglow, 108.

Five of these gentlemen were selected by vote in open convention to serve as judges. The following were selected: E. B. Core, Cincinnati, O.; J. Brittingham, Quincy, Ill.; D. Thompson, Kansas City, Mo.; A. J. Doerr, Louisville, Ky.; A. J. Roe, Chicago, Ill.

Meeting then adjourned until 2 o'clock.

At the afternoon session the Cramer prizes were awarded for the best work on Cramer plates. Result was as follows: Grand prize, silver cup, Pirie McDonald, Albany, N. Y.

Twelve Special Prizes, Gold Medals.—Jones & Lotz, San Francisco, Cal.; William F. Uhlman, St. Joseph, Mo.; W. M. Morrison, Chicago, Ill.; D. R. Coover, Chicago, Ill.; Baker's Art Gallery, Columbus, O.; S. L. Stein, Milwaukee and Chicago; Arthur & Philbric, Detroit, Mich.; W. J. Root, Chicago, Ill.; James Landy, Cincinnati, O.; W. H. Jackson, Denver, Colo.; Cornell & Saunders, Rochester, N. Y.; R. P. Bellsmith, Cincinnati, O.

Badges.—George Steckel, Los Angeles, Cal.; G. E. Curtis, Niagara Falls, N. Y.; John Rösch, White Plains, N. Y.; Frank Medlar, Spencer, Ia.; O'Keefe & Stockdorf, Leadville, Colo.; Clifford & Son, Muscatine, Ia.; Pifer & Becker, Cleveland, O.; George B. Sperry, Toledo, O.; C. M. Elton, Palmyra, N. Y.; F. H. Curtis, Lansing, Mich.; M. R. F. McCarthy, Binghamton, N. Y.; George H. Hastings, Boston, Mass.; A. H. Spurr, Creston, Ia.; W. W. Dames, San Francisco, Cal.; Hardy & Van Arnan, Troy, N. Y.; A. N. Camp, Jamestown, N. Y.; Charles Monroe, Jamestown, N. Y.; F. M. Somers, Memphis, Tenn.; Frederick B. Johnston, Duluth, Minn.; R. E. Bain, St. Louis, Mo.; Justus Zahn, Galveston, Tex.; H. H. Morris, Galveston, Tex.; T. Zweifel, Duluth, Minn.; Wilkie G. Coss, Grand Rapids, Mich.; C. W. Longdon, Lancaster, Wis.; A. J. Fisher, Quincy, Ill.; W. W. Starks, Sioux City, Ia.; J. George Nussbaumer, Buffalo, N. Y.; Seavy & Fowler, New Castle, Pa.; J. J. Samborsky, St. Louis, Mo.; R. Delamater & Son, Hartford, Conn.; Edgar & Geist, Beloit, Wis.; J. A. Brush, Minneapolis, Minn.; F. A. Miller, Arkansas City, Kans.; A. L. Bowersox, Dayton, O.; M. D. Luehrs, Cleveland, O.; Moore & Neisie, Seneca Falls, N. Y.; W. G. Hussey, Salem, Mass.; T. L. Wales, Keokuk, Ia.; J. G. Browning, Clarinda, Ia.; G. Moses, New Orleans, La.; Rud. Goebel, St. Charles, Mo.; J. C. Varney, La Crosse, Wis.; E. C. Berryman, West Superior, Wis.; Coover & Co., Iowa City, Ia.; W. H. Brenner, Bucyrus, O.; Brown & Schroeder, Kenosha; C. O. Towles, Frostburg, Md.

One of the greatest honors bestowed at this Convention was the grand prize given by Mr. Cramer, which was awarded to Pirie McDonald, Albany, N. Y. This grand prize was a magnificent silver cup, gold lined and beautifully engraved. After the applause had ceased, Mr. McDonald made an appropriate address, paying a graceful compliment to the generosity of Mr. Cramer. Meeting adjourned.

The third session of the Convention of the Photographers' Association was called to order by President Adam Heimberger at 10.30 A.M. The first busi-

ness was the reading of communications by Secretary J. E. Rösch. The communications read were as follows :

RE-MEMORIAL COMMITTEE.

To the Officers and Members of the Photographers' Association of America :

LADIES AND GENTLEMEN,—Your Committee, elected last year at the World's Fair Convention at Chicago, for the purpose of making a demand upon Mr. H. McMichael, of Buffalo, N. Y., for his final report as chairman and custodian of the funds of the Daguerre Memorial Committee, beg leave to report the following communication from Mr. McMichael, which is herewith respectfully submitted. (Report read.)

At the conclusion of the reading of Mr. Hastings' report Mr. Clark stated that, in justice to the other members of the Memorial Committee, the Convention assembled should declare the whole matter settled, inasmuch as Mr. McMichael, the chairman of the Committee, is not honorable enough to come forward with his final report and have the affair wound up in a business-like way ; therefore I move, Mr. President, that the whole matter be declared settled, and the Committee discharged. (Carried.)

The following communications were also read :

PRAGUE, July 3, 1894.

Photographers' Association of America :

MR. PRESIDENT, LADIES AND GENTLEMEN,—I send you from the other side of the big frog pond my best regards, most heartfelt wishes for a very successful convention. Hope it may prove to be a grand success ; am sure it will be, for what I have learned from the papers, the officers did their best to bring forward new ideas. The young men are about to show what they can do ; they surely will do it if the fraternity only helps them. Feel extremely sorry that I cannot be with you ; however, you may be convinced I am with you with all my heart. Now, I would like to ask the Convention one question. Can a member of the Photographers' Association of America retain his membership if he has to stop away from America for a shorter or longer time ? The European photographic societies have members all over the world ; so I would like to learn your opinions what you think of it. Would have liked very much to compete in one of the American classes ; however, had to be contented with foreign displays, and the answer may be as it will, if am living will show up again next year.

With the best wishes for a very successful convention (and many more to come), a pleasant time for all, I remain, with kindest regards,

Yours fraternally,

R. A. SCHLEGEL,

Elberfeld, Germany.

EAST LIVERPOOL, O., July 21, 1894.

GENTLEMEN AND LADIES, FELLOW PHOTOGRAPHERS,—Great is my regret that I cannot be with you at this Convention. Age and distance seem to stand between us, for with the close of this month I close my sixty-ninth year, forty-three of which were spent in the picture art, dating back to October, 1847. For the last four years I have been unable to do any work in the gallery, on account of loss of eyes, except by the use of the strongest glasses, and yet how much I regret my inability to pursue that which my heart so much delighted in. From

1847 to 1854 the daguerreotype was the only picture made on the camera, but thanks to chemical science for lifting us out of the rut of slow time, with bromine iodine and hot mercury fumes thrown in, and giving us the brilliant ambrotype, from which the true picture, the photograph, came in rapid succession; and with what rapid strides the ascent has been made from the plain salted paper, through the various grades and shades of albumen paper, to the beautiful and brilliant prints of the modern papers. During my last days of practice "Aristo" paper was my favorite, on account of the unchanging durability of the picture produced. The field of chemical science is a progressive art since it was first planted on the shores of America; so, may you who are yet young in years, but strong in faith, go on and upward till the highest pinnacle of perfection has been reached, and the beauties of Nature laid before us in their most gorgeous and glowing colors. By the compliments of Sweet, Wallach & Co., of Chicago, I have each month a copy of the *Photographic Review* laid upon my office table, filled with sparkling gems of art which almost fire my ambition anew to don the harness and plunge again, with darkened vision, into the field of my great delight. It furnishes me with a few hours of great pleasure and a subject of much thought; long may it live. And now, my fellow craftsmen, I wish you a pleasant and happy and prosperous gathering, and also a brilliant and prosperous future. And now, brethren and friends, where and who are the old veterans and heroes who pushed the wheels of Daguerre across the mountains of discouragement and planted them in the valley of success all over this globe of ours? Where are they? There are but few of us now left. I may be standing on the top round of the ladder, ready to topple off to give place to the next.

Respectfully,

A. R. GOULD,
163 Washington street,
East Liverpool, O.

JULY 23, 1894.

Mr. J. Ed. RösCH,

Secretary Photographers' Association of America:

The programme of the Photographers' Association, which arrived this A. M., addressed to John Harper, Greenville, O., can only be responded to by his wife, in writing you of his death. He met a sudden death by cable car in Chicago, July 1, 1893. He was in the city at the World's Fair, where he expected to see all that was new, grand and beautiful in his beloved art, and was stricken down at its very gates. He had been in the photograph business for thirty-five years, and always enjoyed the Association so much. I well remember his attending a meeting at St. Louis in 1872, I think. I shall always have a lively interest in the developments of photography, and trust that this present meeting will be a great benefit and pleasure to all assembled there.

Respectfully yours,

Mrs. JOHN HARPER.

After reading the last communication, Mr. RösCH made a motion to send a letter of condolence to Mrs. Harper.

Letter was also received from the Secretary of the Canada Association, Mr.

Pool, wishing to be remembered to the photographers' meeting here, and stating that on account of sickness he was unable to attend.

The next to claim the attention of the meeting was an address made by W. H. H. Clark, introducing Mr. Snelling.

(Introduction of Mr. H. H. Snelling.)

W. H. H. CLARK.—Mr. President, Members of the Photographers' Association of America, Ladies and Gentlemen :

I have a very pleasant duty to perform this morning in the introduction to this Association of an old veteran—a man who in former years has done much for photography and photographers. He is now old, blind and decrepid, and will soon pass over to join the ranks of those who have gone before. Although he is unable to see you, he has looked forward to this hour with anticipations of great pleasure.

In his earlier days he edited and published the *Photographic and Fine Art Journal*, a publication of great merit, and the first photographic publication in the world. It had an existence for several years, but unfortunately did not receive the patronage to which it was so justly entitled, and money had to be raised from other sources to meet its obligations, until it finally had to yield to the inevitable. This now aged and blind worker has written and published many articles of value for other and later photographic publications, which have proved very helpful and encouraging to the struggling photographers.

He also edited and published for years a weekly newspaper, and spent a very large portion of his earlier days in writing and compiling matter for a cyclopædic photography. After working upon it for many years he began breaking down in health by frequent attacks of nervous prostration, and was at last (about twenty-five years ago) compelled to dispose of his manuscript, of about five hundred pages of closely written foolscap, in order to raise a little money on which to subsist.

I have the honor, ladies and gentlemen, of introducing to you this blind and aged editor and author, Professor Henry Hunt Snelling. (Applause.)

Mr. Snelling arose, and was led to the front of the platform by Mr. Clark, when he made the following remarks :

My brethren of the Photographic Society : It gives me a great deal of pleasure and happiness to meet you upon this occasion. My condition, age and health will not allow me to make myself heard, but a man never knows what he can do until he tries, and I will try and say a few words to you to-day. I have always had an interest in the photographic business. I have always done something to advance its interests, and as long as there is breath in my body I shall devote it to the interests of the photographic order.

This is the first time I have had the pleasure of meeting the Association, and it is undoubtedly the only time, as I can't expect to live much longer, but as long as I do live, my interests will be with the interests of the photographic art. I can look upon you as my brethren, and I hope that you will consider me as a brother in the art ; but I will not take up your time, and I must close by wishing you more success than you have ever had before. But I must say one thing more to the photographic community of the United States : There never was a business interest in the world that was not benefited by journals devoted to that art. Even the shoe dealer and the tailor have adopted journals for their improvement. They read them and study them from day to day, and that is why we

see such fine fitting shoes and clothes on our people at the present day, and there is no business that can be so progressing as photography.

A motion was made to make a collection for Mr. Snelling, but his friends having provided a home for him during the remainder of his days, motion was withdrawn.

At the close of his address he was unanimously elected a lifelong honorary member of the Association.

A paper entitled "Photographers at Home and Abroad" was then read by A. L. Bowersox, Dayton, O.

PHOTOGRAPHERS AT HOME AND ABROAD.

[Read before the Photographers' Association of America at St. Louis, by A. L. BOWERSOX.]

THIS will not be a treatise on ethnology, but simply delineating a few characteristics of prominent and well-known photographers at home and abroad. Time and space does not permit me to go into details, so will simply give you in as concise a manner as possible a short sketch of the lives of some of the oldest and well-known photographers. The lives of successful men are always full of interest to me, and I always receive instruction and encouragement by perusing the lives of such men as are known to have made their mark in any known profession.

Since my earliest days I have heard of Carl Wunder, of Hanover, Germany. His productions have made him a name; he has been honored and elevated among his fellows. His portrait work at present, however, has an old style about it, which makes him less popular among his former customers, and he allows some of his best trade to slip away to some of the younger and more progressive competitors. His landscapes, however, can not be beaten by any one.

Who has not seen some of Scharwechter's creations but to admire them. He is an artistic poser, making the best of the subject at hand. In fact, you wonder how he possibly could make so much out of the material at hand. At last year's Ohio convention one of this artist's pictures was placed on the easel for criticism. It was examined, discussed and re-examined by critics, but not criticised. That picture I have in my possession, and value it very highly. And yet you might be surprised to know that his patrons must climb four flights of stairs before they come to his reception room, and then they pay \$8 for a dozen cabinets of albumen paper, and \$10 for a dozen on platinum.

There is another photographer in Germany who has taken prizes in America—Mr. Frederick Müller, of Munich. He is a very busy man, always on a run, never too tired to try anything new in the profession. He is quite a prize winner, having won a large gold medal in his own country in 1887; in 1883 at Coblenz, St. Louis and Frankfort the same year; 1886 at Stuttgart, and London in 1887; Boston and Melbourne in 1888; Vienna in 1890, and Amsterdam and Dresden in 1891. In 1892 I was present at the Convention at Wiesbaden where he won a silver cup for the best pictures on Mignon paper. Mr. Müller has in use in his atelier a peculiarly constructed camera. It is made like a stereoscopic instrument, having two lenses, but only one is used to expose the plate, while the other is used for focusing only. The plate is placed in position and the slide drawn, then the image is focused with the other lens. The operator can take the subjects while they are wholly unconscious of the fact, thereby

obtaining an unassumed and natural expression. Some of you enterprising, push and go-ahead photographers try this method and see what excellent results can be obtained.

The letter head Mr. M. uses reads like :

Photographische Anstalt,
von Friedr. Müller,
Herzogle Bayer, Hofphotograph.
9 Amelien Strasse,
Gegeneuber dem Restaurant Künstlerheim,
Munchen.

Another of Germany's progressive prize winners is Fritz Eilander, of Cologne. This gentleman is not behind his German brethren in portraiture. He also won first prizes in Berlin, at the German Photographers' Association in 1884 ; also New York in 1885 ; London, 1886 ; Florence, 1888, and Melbourne, 1889. Mr. Eilander's plan of a skylight for general use may be of interest. His light is constructed in three separate sections. This he claims the best light for general use.

Europe as well as America has a number of distinguished photographers. Time and space will not permit to dwell upon the merits of such men as Nadar, of Paris ; Van der Weyde, of London ; Lafayette, of Dublin, and Warneuke, of Glasgow. The last-named gentleman is as well informed in business principles as in art. Mr. W. was receiving 28 shillings for cabinets, when news reached him that Lafayette, of Dublin, was going to open an establishment in his city. Now, what did he do? Make cabinets for 10 shillings a dozen, to drive the enemy from the field? No, he raised his price to 36 shillings, or \$9 per dozen, instead of lowering his price, as is customary with us, and his explanation for his actions was this: "That a certain class of people always prefer to go where the highest price is charged for the best work. He raised his price to a point where his competitor could not very well raise him 1 shilling and secure his trade.

Now let us retrace our steps homeward, and see if we have not some who have done as much or more to raise our beloved art—some would say profession—to the high standard to which it has been raised.

Mr. N. Sarony, of New York, has the credit of being one of the first to create a revolution in the photo art by his posing machine, which he exhibited and explained to the profession personally, thereby creating a desire in the breasts of American photographers for higher art. And to the genius and example of Mr. S. is ascribed the credit of the enviable position now reached by American photography. I would refer my respected audience to the January number of 1893 of *Wilson's Photographic Magazine* for a full and interesting biography of the life of this distinguished and honored American photographer.

If you had been in New York on the morning of the 14th of October, 1853 (not 1492, when America was discovered), you would doubtless have heard the bells ringing and the glad news heralded that "unto us a son is born, unto us a prince is given, who shall lead his (photographic) people, and his name was not called wonderful counselor," but B. J. Falk. This name is not wonderful, but his productions are truly wonderful. Mr. Falk, after finishing his education by graduating from the College of the City of New York, took up crayon drawing. Being naturally of an investigating turn of mind he interested himself

in scientific studies. After making crayons for five years he enlarged his studio into a photograph gallery. In 1881 he moved to Broadway, where the business grew rapidly, developing largely in the line of portrait of celebrities. In 1883 Mr. Falk was completely successful in producing the first electric light stage photographs, where a large volume of electric light was used. This took place at midnight, May 1, 1883, the scene being laid in a play called "A Russian Honeymoon." Over thirty persons figured in the scene. A rectilinear lens was used, and full-time pictures produced in six seconds. In 1892 Mr. Falk moved into his present quarters at 13 and 15 West 24th street.

In portrait work it is the aim of Mr. Falk to secure simplicity of treatment, and bringing to the surface the best in the subject at hand. This applies also to professional work, in which picturesqueness and striking effects are generally desirable. Mr. Falk says: "I name expression, posing and lighting in order as they appear to be most important. The technique of the profession being absolutely under the control of the operator since the introduction of the dry plates, there is no excuse now for any but perfect photographic results. I have always made my price high enough, so that I did not have to consider the cost of material while doing my work." He thinks the camera in proper hands is, in many ways, a finer art tool to-day than the chisel and brush, although, like them, it has its limitations. In the past six or seven years Mr. Falk has been engaged in a bitter warfare against all sorts of pirates who prey upon the photographers' creations. To do this it was necessary to copyright thousands of photographs. The sweeping decisions that have been rendered in the United States courts in a number of cases have raised the dignity of our profession in making our rights respected where formerly they were entirely ignored. For this credit is due Mr. Falk, for he has spent many dollars in defence of his and our rights. So we say, "honor to whom honor is due."

Still another of the honored of our ranks is the able and indomitable F. Gutekunst, of Philadelphia. Who has not seen productions from this master in photography? Mr. G., in his early days, was engaged in the drug business, but being of an investigating turn of mind, he commenced to experiment in Daguerreo and ambrotypes, and he modestly says "his friends really thought they had merit." So he was induced to leave the drugs and make faces, in which occupation he, with a few others, have succeeded admirably. It is to one of his excellent pictures that I attribute a great deal for the little success, if any, I have attained. When well nigh discouraged, working for \$3.50 a week, out of which had to come my board and clothing, I saw one of his masterpieces in the *Philadelphia Photographer*, now *Wilson's Photographic Magazine*. This was in 1878. It appeared like the star to the shepherds, and was to me like an oasis in a desert. If such pictures, I thought, can be made with a camera, I take courage, and press forward toward the prize of the high calling to which photography has been elevated.

In all these years of success our friend has not lost an interest in those who have not attained the topmost round, and, not like the haughty despot, who, after reaching the topmost round of the ladder, turns his back, scorning the base degrees by which he ascended. After a person comes to a point in life where his productions seem perfect, and there is nothing more to learn, the usefulness of that life has reached its zenith.

Last but not least: Let me call your attention to one who, by his unobtrusive

acts and productions has kept in advance of the progress photography has made. Always in favor of conventions, and that they should be carried on for the benefit and advancement of its members. The subject of our sketch, Mr. James Landy, was born in New York, and commenced his photographic career in 1850. He continued his work there until 1863, when he removed to Cincinnati, where he has done a prosperous business ever since. He has from time to time produced pictures that illustrated various subjects that have brought him honor and reputation. Mr. Landy won the Blair Cup, besides medals at home and abroad. Mr. Landy's work is bold, and yet full of detail, delineating the subject as well as the artist in the same picture.

In reply to what he considers essentials to success, Mr. L. says: "That to succeed in anything, your heart must be in your work; be sincere and conscientious in all you do; give all your time and thought to whatever you are engaged in; read and become familiar with the work of those who have made their mark. Always keep up the standard of your work, and compensation will surely follow."

Mr. Landy is in favor of and thinks that business methods should be more discussed at our conventions, rather than processes. This has always been a desire of mine to know more about business, how to conduct a business on successful principles. This reminds me of the man who said, "It is no disgrace to be poor, but very inconvenient."

One more word in closing to the young Push and Progress of this Association—let us always work for the maintenance of our Association. Let us all say, *vive l'Association*. Give of our time, talent and money if need be, and raise it to the standard it should be. Think not, young man, because I have failed to mention your name among the honored, that I fail to appreciate your work and devotion to the cause. It is not unlikely that when you have been plodding along for fifty years or more, some one may write a much better and able article on your success and abilities, but remember Pope says:

"A little learning is a dangerous thing,
 Drink deep or taste not the Pierian spring.
 These shallow draughts intoxicate the brain,
 And drinking largely sobers us again.
 Whoever thinks a faultless piece to see,
 Thinks what never was, nor is, nor e'er shall be."

Motion was then made and seconded that a vote of thanks be given to Mr. Bowersox for his paper.

The Committee appointed to nominate officers for the following year made the nominations, and the election will take place in the morning. Nominations: J. S. Schneider, Columbus, O., President; R. P. Bellsmith, Cincinnati, O., First Vice-President; Geo. Steckel, Los Angeles, Cal., Second Vice-President; J. Ed Rösch, St. Louis, Treasurer; P. McDonald, Albany, N. Y., Secretary.

No session held in the afternoon. A large number of the photographers paid a visit to the factory of the G. Cramer Dry Plate Company, after which they accepted an invitation to visit the Anheuser-Busch Brewery Company.

An instructive session and lantern exhibition was held at Entertainment Hall in the evening at 8 o'clock. Some of the best pictures of the year were shown for criticism, which was followed by demonstrations of lighting, posing and grouping, the Anthony electric light apparatus being employed.

On Thursday there were no sessions held on account of the photographers attending a grand excursion up the river given to the photographers, their families and friends. An extensive programme was gotten up for the amusement of the visitors, prominent of which were a baseball game between nines composed of members of the Association, sparring match between J. C. Strauss, of St. Louis, and Chas. Hetherington, Chicago, races and games of all kinds.



“Special Prize” Picture, by Frank A. Place.

Negative made with Williams Flash Machine.

Reproduced from 20 x 24 American “Aristo” Print.

The fourth session was called to order by President Adam Heimberger, Friday morning.

First order of business was selection of next place of meeting.

Nomination of cities was then in order : Atlanta, Ga. ; Philadelphia, Pa. ; Detroit, Mich. ; Colorado Springs, Colo. ; Kansas City, Mo. ; Cincinnati, O.

Cleveland was also mentioned, but was withdrawn.

President Heimberger appointed a committee consisting of Mr. Shores, of Indiana; Geo. Steckel, of Los Angeles; De Voss, of Indiana, to distribute ballots. During the distribution of the ballots C. L. Weed, of Detroit, made a few remarks.

LADIES AND GENTLEMEN,—There is a delegation of stock dealers down here from Detroit to invite you there, but as they are not here at present I take it upon myself with their permission to invite the photographers to Detroit next year for the Convention.

We have the ability, we have the city and I think we have the hospitalities. We would like to have you come there; we will take good care of you, and, we hope, as well as you have been taken care of here in St. Louis. It is very, very pleasant there; we have a great river, and we have a great Convention city. I therefore invite you in the name of photographers to come to Detroit next year.

The ballot resulted as follows: Philadelphia, 35; Kansas City, 14; Cincinnati, 1; Detroit, 70; Atlanta, 4; Colorado, 5; Cleveland, 1; Rochester, 1.

Next convention will be in Detroit.

Election of officers was then in order. The following nominations were made.

For President, J. S. Schneider, Columbus, O.; J. Hemperley, Philadelphia, Pa. Vote was as follows: J. S. Schneider, 106; J. Hemperley, 91. J. S. Schneider elected President. First Vice-President: R. P. Bellsmith, Cincinnati, O., was unanimously elected. Second Vice-President: George Steckel, Los Angeles, Cal.; C. E. Sawyer, Wichita, Kans. S. L. Stein then made a few remarks. "I will only say that the Nominating Committee choose Mr. Steckel as Second Vice-President as a sort of little courtesy which this Association owes him. He has very pretty work here, and tears himself away from business and comes a long distance for so many weeks, and I think that nothing but that liberal offer of Second Vice-President be tendered him." Vote was as follows: George Steckel, 102; C. E. Sawyer, 80. George Steckel elected Second Vice-President. For Secretary, Pirie McDonald, Albany, N. Y., elected for Secretary unanimously. For Treasurer, J. E. Rösch, St. Louis; L. F. Hammer, Jr., St. Louis. Mr. Steckel made a few remarks in favor of Mr. Rösch.

GENTLEMEN,—I don't think too much can be said for Mr. Rösch. He has worked very hard for the Association, and he has accomplished a great deal, and I think for one that has done so much for us he ought to be elected our next Treasurer. The position of Treasurer will not require so much work next year, and I trust that you will support Mr. Rösch. Number of votes cast, 142; J. E. Rösch, 82; L. F. Hammer, 60. J. E. Rösch elected Treasurer. Meeting adjourned until 3 o'clock.

Motion was made and seconded that one thousand copies of the Constitution and By-Laws be printed and mailed to every member in the United States.

Afternoon session called to order 4.30. Cramer special prizes were then awarded. Mr. Cramer said there was so great a number of pictures sent in to us that we were unable to display them all; there were two hundred and twenty-eight exhibits. We could only display fifty or sixty which were entitled to the prizes, and of those only a few of them could be placed on the walls; others will therefore please excuse us that their work has not been represented, and if everyone did not get a prize it is not their fault or mine.

I would like to give everyone a prize. I would also like to say a few words in regard to our excursion. Our local committee had done everything to make it pleasant for you, and anything that was not pleasant you should not blame us for.

Motion was made and seconded that a vote of thanks be extended to A. Heimberger and to all the officers connected with him.

A vote of thanks was also given to the press of St. Louis.

Prizes were then awarded as follows:

SPECIAL PRIZE, ELABORATE SILVER CUP.

Frank Place, Chicago, Ill.

GENRE PRIZE.

S. L. Stein, Milwaukee, Wis.

GRAND PRIZE, A DIAMOND BADGE.

W. M. Morrison, Chicago, Ill.

CLASS A.

One Gold Medal, one Silver Medal, three Bronze Medals and one Diploma.

Gold medal, Pirie McDonald, Albany, N. Y.

Silver medal, R. P. Bellsmith, Cincinnati, O.

Bronze medal, E. C. Dana, New York.

Bronze medal, Pifer & Becker, Cleveland, O.

Bronze medal, Gilbert & Bacon, Philadelphia, Pa.

Diploma, Arthur & Philbric, Detroit, Mich.

CLASS B.

Gold Medal, Silver Medal, two Bronze Medals, and one Diploma.

Gold medal, R. P. Bellsmith, Cincinnati, O.

Silver medal, J. Hemperley, Philadelphia, Pa.

Bronze medal, E. C. Dana, New York.

Bronze medal, Arthur & Philbric, Detroit, Mich.

Diploma, Gilbert & Baker, Philadelphia.

CLASS C.

One Gold Medal, one Silver Medal, one Diploma.

Gold medal, Pirie McDonald, Albany, N. Y.

Silver medal, J. Hemperley, Philadelphia, Pa.

Diploma, R. P. Bellsmith, Cincinnati.

CLASS D.

One Silver Medal, one Bronze Medal, and Diploma to all over 21 per cent.

Barnum, Springfield, O.

Bronze medal, Kimball & Co., Concord, N. H.

CLASS E.

One Silver Medal, one Bronze Medal, one Diploma.

Silver medal, W. H. Jackson, Denver, Colo.

No other competitors.

CLASS F.

One Silver Medal, one Bronze Medal, one Diploma.

Silver medal, J. Rösch, White Plains, N. Y.

Bronze medal, exhibit marked XXX.

CLASS G.

One Silver Medal, one Bronze Medal, one Diploma.

Silver medal, George W. Lease, Peru, Ind.

Bronze medal, exhibit marked XXX.

CLASS H.

One Silver Medal, one Bronze Medal, one Diploma.

Silver medal, H. H. Morris, Galveston, Tex.

No other competitors.

CLASS J.

One Diploma.

James Inglis & Son, Chicago, Ill.

CLASS K.

One Gold Medal and Diploma.

James Inglis & Son, Chicago, Ill.

CLASS L.

Silver Medal, one Diploma.

Silver medal, Inglis & Son, Chicago, Ill.

Diploma, E. Long, Quincy, Ill.

FOREIGN CLASS.

Gold Medal.

G. Brickeath.

Mr. Obernetter, Munich.

W. Wilekel, Hamburg.

Most tastefully arranged exhibit—George Steckel, Los Angeles, Cal.

For best appliances—E. & H. T. Anthony & Co., 591 Broadway, New York.

A diploma was also awarded to the Dorticus Manufacturing Company for an embossing and printing apparatus.

On motion of L. F. Hammer, \$1,000 was appropriated for prizes for next convention.

The retiring officers were presented with elaborate gifts from their many friends for their untiring efforts in behalf of the Association during the year 1893 and 1894.

On motion, Convention adjourned, to meet at Detroit next year on a date to be fixed by the new Executive Committee.

THIS issue of the BULLETIN has been slightly delayed in order that above report might be included.

THE EXHIBITION OF APPARATUS AT THE CONVENTION.

CONSIDERABLE interest was manifested in the exhibition of apparatus. No expense had been spared by the exhibitors and the result was that photographers from all parts of the country could see beneath one roof every notable improvement in the appliances used by them. The greatest attraction was undoubtedly the Anthony electric light apparatus, and the operators at this exhibition were kept busy exposing plates and explaining the instrument. For the instructive session the apparatus and reflectors were moved into the theater, thus demonstrating their portability and adaptability to circumstances. Next in interest was the Williams flash machine, and with this instrument many excellent 20 x 24 negatives were made. Efficient artificial light in the studio has long been sought by the photographer, and the two pieces of apparatus above referred to gave every satisfaction to a most critical gathering.

A. M. Collins Manufacturing Company had a large exhibit in charge of the genial Mr. Wood. Every possible design of card mount was shown, the whole exhibit being tastefully arranged. Sweet, Wallach & Co., of Chicago, had a large assortment of Hetherington backgrounds and accessories; J. C. Somerville, of St. Louis, a display of general goods; H. A. Hyatt, general goods, and a pneumatic retoucher; Walpole Chemical Company, samples of hypo, sulphite of soda and various chemicals; J. Rosenthal & Co., frames and mouldings.

The dry plate companies had a fine display of photographs. The Cramer exhibit we have alluded to elsewhere. The thanks of the Association are certainly due to Mr. Cramer for his lavish hospitality. Cooling lemonade was freely dispensed on the balcony during the entire week, and those who know St. Louis in July will realize the benefit thus conferred by this father of the Association. Probably the largest exhibit was that of the American Aristotype Company, of Jamestown, N. Y. Indeed, so widespread is the use of this paper, that practically the whole print exhibit was on "Aristo" paper. A certain manufacturer of gelatino-chloride paper attempted to run a separate exhibition at the Southern Hotel, but was not countenanced by either officers or members. This sort of thing calls for the strongest condemnation, since every facility was offered all manufacturers for the placing of exhibits in the Convention building. The largest show of apparatus was made by E. & H. T. Anthony & Co. Their famous Climax portrait cameras, fitted with Dallmeyer's lenses, were used in the practical demonstrations of the Anthony electric light apparatus and the Williams' flash machine alluded to above. The cameras were supported on New York camera stands, the latest style of studio stand. For rapid and efficient working, the new back attachment was much praised, and this received the diploma for the most notable improvement in apparatus. On this attachment the slide is drawn, held in such a position as to cover the aperture, and then replaced after exposure, the whole being done by sliding the attachment to the right for exposure and to the left for closing and removing the holder. A new background carrier shown at this exhibit was pronounced the simplest and most effective carrier on the market. The raising and winding of the roller is done by turning one wheel, and the carrier is entirely innocent of ropes, chains and ratchets. The Hoover bromide printing machine caused

considerable comment, and the Perfect photo-print mounter was voted a success.

Other exhibitors were Dorticus Manufacturing Co., Acme Burnisher Co., Nepera Chemical Co., Photo Materials Co., J. Inglis, Simpkinson & Miller, Photogenic Paper Co., and the Mallinckrodt Chemical Co.

CONVENTION NOTES.

OF the New York delegation, John Rösch, of White Plains, received the first prize in Class F, for landscapes with figures, a Cramer badge and an "Aristo" medal. C. A. Johnstone received a Cramer badge for an excellent set of cabinet prints. Both will be heard of again next year.

THE first item of the Convention programme—the greeting of friends—was partly spoiled by the action of a manufacturer who attempted to run a separate exhibition. After the first day this side-show was sadly neglected.

THE party from New York had a particularly comfortable and enjoyable trip over the Chesapeake and Ohio road. Mr. Frank McConnell, the passenger agent for New York, went with the party as far as Philadelphia, and by letters of introduction paved the way for them. The views from the observation car were simply grand. Lovers of mountain and river scenery will do well to take a trip over the Chesapeake and Ohio.

THE party were met at St. Louis by the Reception Committee, and during the whole week received every attention.

ST. LOUIS is the most hospitable city in the world. It will be impossible to duplicate the 1894 Convention. Visitors will not for a long time forget how "Papa" Cramer and his St. Louis boys entertained them.

AT the opera at Uhrig's Cave, a little surprise was sprung on the audience. Towards the close of the play a cleverly got-up double of Mr. Cramer appeared on the stage, and was rapturously greeted by the photographers present. In a few moments the real Cramer recovered from his surprise, and, throwing his hat to his double, revealed the hoax.

"CHARLIE HETHERINGTON's laugh will break up the show yet."—*Boccaccio*.

THE baseball game was a distinct success while it lasted. George Ayers sent the ball out of sight, and could hardly be restrained from running twice round the bases. The game was given by the umpire to Strauss' nine, because of the interference of one of the biggest of the Farmers.



Badge presented to G. Cramer.

THE next convention is to be held in Detroit, Mich. The local committee should not attempt any such lavish entertainment, but should see that more time is devoted to business. It was very hot in St. Louis, and consequently the business meetings were cut as short as possible.

THE parties who mismanaged the optical lantern at the instructive session should take a few lessons before making the attempt again. Three minutes after the commencement of the exhibition of slides the lower lantern went out and did not return, and two minutes later the condenser of the upper lantern cracked. This stopped the "criticism of work" part of the programme. Nothing but carelessness or lack of acquaintance with the lantern could have caused such mishaps. Next time let the lantern be managed by a professional operator.

THE rest of the instructive session was devoted to the demonstrating of the Anthony electric light apparatus. A subject was obtained, and some of the best known photographers gave lessons in posing and lighting. Secretary J. Ed. Rösch pronounced the apparatus a perfect substitute for the skylight; Vice-President Bassett praised it as being the greatest advance in artificial lighting, and Place, Coover, Heimberger and other authorities gave it unqualified approval. The 5,000 candle-power light burned perfectly steadily and was highly endorsed.

THE excursion to Montesano Park was a grand success. The *State of Kansas* easily accommodated the large party, and everything was bright and gay from start to finish. The party of professional gamblers who got aboard were disposed of in short order. The Tennessee warblers and a good band furnished lots of entertainment. It was very hot, but very enjoyable.

THE boxing match resulted in victory for Strauss, though Hetherington could at any moment have taken the upper hand. The latter, it is well known, is of a very tender disposition, and probably the fear of hurting Strauss lost him the victory. The latest news is that referee and seconds are likely to recover.

THE distribution of prizes was not the least entertaining part of the day's fun. By the way, the tub race was a walk-over for G. Cramer.

EVERY one went home satisfied.

THE ELECTRIC LIGHT IN PHOTOGRAPHIC STUDIOS.

CONSIDERABLE interest has been excited by our articles on this subject, and many letters have reached us regarding the practicability of the electric light as a source of illumination in the studio. In preparing an exhibit for the Convention of the Photographers' Association of America we had occasion to make a series of 8 x 10 and 20 x 24 negatives, using the electric light apparatus described fully in the June issue of the BULLETIN. Our method may be of interest to those who contemplate adding this piece of apparatus to their outfit. We will describe the making of the 20 x 24 negatives. These at all times call for considerable care from start to finish, for to waste a plate of this size is a serious thing to the photographer. The holders, which, by the way, were Benster holders fitted with curtain slide, were first carefully dusted and then wiped with a slightly damp cloth. The plates were dusted with a camel's-hair brush, care being taken that the brush was quite dry and was itself free from dust or stiff hairs. The practice adopted by many of testing the brush by rubbing it over the cheek or back of the hand is not a safe one, especially in these days when the thermometer is



From 20 x 24 American "Aristo" print.
Negative made with Anthony Electric Light Apparatus.

in the nineties. The holders being loaded, the electric lamp was replenished with carbons and started by turning the switch. The light was directed so that part of the walls of the chamber were made to serve as a skylight. The lens used was a 20 x 22 Dallmeyer rapid rectilinear, which, with but little persuasion in the way of a diaphragm, will sharply cover a 20 x 24 plate.

Regarding the posing we will say nothing, except that every attention must be paid to the smallest details, for, in prints of this size, every inaccuracy becomes painfully apparent. The lighting is adjusted by means of reflectors, or by slightly changing the direction of the light. A trial exposure on a small plate showed four seconds to be the correct time for exposure. Six 20 x 24 plates were exposed in quick succession, the posing and lighting being changed each time. Then followed the twelve 8 x 10 plates. The plates used were the quickest obtainable. Development with our regular pyro developer yielded eighteen negatives, which were in many points superior to anything that could be obtained under the skylight. Add to the general ease of working, the fact that the apparatus gives a light of constant quality and one that can be duplicated at any time of day or night, and the advantages of an electric apparatus will be apparent. There is no doubt but that electric lighting in photographic studios has come to stay. Already several galleries have invested in the apparatus, and we hear of nothing in the way of complaint, but instead a strong endorsement of the utility and practicability of this form of lighting. The full-page half-tone which accompanies this article was made from one of the 20 x 24 prints shown at the Convention.

THE HAND CAMERA.

AUGUST might well be called the hand camera month, for it is the month in which the hand camerist revels. It is the month of vacations, and in these days when every tourist is or should be a photographer, the hand camera travels far and wide. At the risk of repeating truths that have already been written by us in previous articles on this subject, we will offer a few more words of advice. Before starting on a trip, every piece of photographic apparatus should be overhauled with the same care that one gives to one's wardrobe. If a beginner, every part of the equipment should be understood. A lady acquaintance purchased by mail a camera, and got with it an instruction book in which the most striking line was, "You press the button and we do the rest." She compassed the globe, pressing the button. The cap was never removed or the film turned. Another friend brought his lens to us to-day with the complaint that it would not cover the plate, and that, in consequence, his trip, from a photographic point of view, had been a failure. Misunderstanding him, we fitted it to the front board of a 5 x 7 camera, and soon convinced him that it covered a 5 x 7 plate sharply. He naively asked us why we chose so large a plate, as his was a 4 x 5 camera. Sending him home for his camera and his negatives, we found that the bellows cut off. Moral: Know the use and construction of every part of the instrument, and develop a plate occasionally to be assured that everything is running smoothly.

While away, do not, even when greatly afflicted with that tired feeling, neglect to properly care for the camera. At the seashore, when taking a nap beneath the shade of your umbrella, do not leave your box to the mercies of

sun and sand. Sand is a good thing for the photographer to possess, but the apparatus is better without it. If, in the country, keep prying hands from investigating and avoid damp and dust. Dampness is a bad thing for leather-covered cameras, and dust is the worst of nuisances. If dust or sand are on the lens, do not proceed to polish off with a handkerchief or a piece of newspaper. Several hours were expended in grinding and polishing that piece of glass, but a piece of grit pushed over the surface will quickly ruin it. Lightly flick the lens until all visible particles are removed, and then wipe carefully with a soft rag or a piece of chamois.

Plate-holders, too, require considerable care and attention. Black streaks along the surface of the plate are often due to careless handling of the plate-holders, resulting in the displacing of the felt valve. Indeed, every part of the camera should be carefully tended, for every portion must be in good order, or the whole equipment will be worse than useless. The shutter, especially, must be kept free from damp and dust. Shutters, as made nowadays, are delicate pieces of mechanism, and should receive as much care as the works of a watch.

Again, a darkroom is not, even in these progressive days, to be found in every summer boarding house. It therefore becomes the duty of every photographer, while of course impressing on the landlady the desirability of so useful an adjunct, to convert his bedroom into a temporary darkroom for the changing of plates. Take along a few pieces of non-actinic paper, and, when blocking out the light, do not forget the transom over the door.

Unless there is plenty of room and water and every facility, it is best not to attempt development when away from home. Better by far to have a few weeks of anticipation with satisfactory realization than a lot of poor negatives. Our own experience is that, especially with films, there is no place like home for development. In the better days to come every facility will doubtless be offered the tourist photographer, but for the time being we must learn to labor and to wait. The beginner will probably want to rush into print at once, but while it is well to develop one or two negatives to assure one's self that the exposure is correct and the emulsion all right, the bulk of the exposures had better be brought home undeveloped.

Take along a tripod. All cameras are now fitted with plates for tripod screws, and many subjects will present themselves that cannot be satisfactorily treated but by the aid of the tripod. Very compact tripods are doubtless a boon to the traveler, but rigidity should be given first place. Embrace this opportunity and try a dozen orthochromatic plates. Used properly, there is little doubt but that the negatives made upon them will be the best made during the trip, and finally, if during your outing you come across a photographer's paradise, send us a description and a few prints that the readers of the BULLETIN may profit thereby.

ITEMS OF INTEREST.

A NEW photographic magazine will shortly make its appearance in England. It will deal with the popular side of photography and cater to the interests of beginners. The magazine will be produced by Messrs. Percy Lund & Co., and will bear the title of *The Junior Photographer*. It will be conducted by Matthew Surface, editor of *The Practical Photographer*.

WE have received many requests for copies of the BULLETIN of June 10, 1893, and of January, February and March of this year. We shall be glad to hear from any of our readers who desire to dispose of these numbers.

THE addition of 1 part of fluosilicate of soda to each one-thousandth part of pyro developer is said to preserve the latter without depriving it of any of its developing qualities.

FOR the photographing of engraved glass vessels, the following method is recommended in *Die Photographie*. In order to reduce the vigor of the impression of the back surface, the front side of the glass should be rubbed with powdered talc and lightly dusted with a soft cloth so as to leave the talc only on the etched or engraved portion. The vessel should then be filled with a very dilute solution of permanganate of potash. After such treatment, a photograph showing a clear impression of the etching or engraving may readily be obtained.

IN *Revue Suisse*, M. Cazaw gives the following formula for a good non-actinic medium. Fifty parts of gelatine are allowed to swell in a solution of nitric acid, 2 parts; glycerine, 7 parts, and water, 450 parts. After dissolving by heat, 5 parts of carmine dissolved in 40 parts of ammonia are added. Glass can now be coated with the mixture.

ALTHOUGH Iris diaphragms were made first over fifty years ago, and were used in connection with the microscope all this time, it seems strange that they were not sooner brought in connection with photographic lenses. An American optician, Schnitzer, used them in connection with portrait combinations over twenty years ago, but they were not known to the general public until quite recently. In the last few years, however, the various advantages, which are so manifest, have been fully appreciated, and we note that the American opticians, Bausch & Lomb Optical Co., are supplying them altogether with their various kinds of lenses. They have also made some improvements in construction, among which may be specially mentioned the fact that the blades, or leaves, forming the Iris diaphragm are made of hard rubber instead of bronzed metal, a fact which is of great importance when we consider that the interior of the lens should be free from reflections, and that this does not show with hard rubber, whereas it may do so with metal.

TO make a cement for mending porcelain, precipitate copper in fine powder by shaking a solution of copper sulphate with small pieces of tin. Wash the powder thus obtained and take from 20 to 30 parts, the hardness of the cement depending on the quantity of copper employed. Place the copper in a glass mortar and add thereto sufficient sulphuric acid to form a paste. Then add 70 parts of mercury, stirring constantly so as to make a thorough mixture. Wash well, to remove all the sulphuric acid. To use the cement, heat the parts to be cemented to a temperature of about 370 degrees, and the cement until it has the consistency of melted wax.

REDMOND BARRETT, whose excellent articles on retouching will be remembered by our readers, is of the opinion that coloring is a profitable branch of photography, much neglected by professional photographers.

IT sometimes happens that backgrounds, especially bust grounds on stretchers, become indented and otherwise marked by reason of head rests or other accessories being accidentally or carelessly placed too near them. Such marks may easily be removed by laying the background nearly flat and sprinkling with water from a can fitted with a fine spraying nozzle. The ground becomes limp while wet, but, when dry, regains its stiffness, all marks being obliterated.

Dr. MIETHE thinks that dampness has as much to do with the deterioration of show-case samples as the action of light. He suggests that the wooden sides of the show cases be perforated to give entrance to air and to prevent the condensation of moisture on the glass. He recommends also that a space be left between the wall and the back of the case for the free circulation of air. Inspection of the samples displayed in show-cases indicates that far too little attention is paid to this, the photographer's best advertisement. It should be borne in mind that the public judges the capabilities of the photographer by the display he makes. A change, say once a week, will surely be productive of more business.

IN recent work with the Anthony electric light apparatus, the chamber has been discarded and a screen with a slanting top used as a reflector. The results were very satisfactory. Further experiments will be made, and it is hoped that the more or less cumbersome chamber will be found unnecessary.

THE J. C. "Tabloid Developer," manufactured by John Carbutt and sold by our publishers, will be found useful for travelers. The reducer is labeled J, and the accelerator C. Each is wrapped in tinfoil and makes a small cylinder an inch long.

To readily dissolve the tabloids, place them between stiff paper and crush by rolling a bottle over them, then place with the required quantity of water in a bottle and shake until solution is completed, let stand a few minutes to settle, or filter through a tuft of absorbent cotton placed in a glass funnel.

For time exposures and tentative development, dissolve two J and two C tabloids in 6 ounces of cold water (distilled, melted ice or boiled city water). A few drops of a 10 per cent. solution of bromide of potash may be added after detail is well started and development allowed to go on to gain density.

For instantaneous exposures dissolve three J and three C tabloids in 4 ounces of water, commence development in the weak solution given above, and when detail is fairly well out, transfer to the last-named solution.

AT a meeting of the Photographic Society of Great Britain, held June 26th, Mr. Lawrance exhibited specimens of carbon tissue for daylight use, to which we have already alluded. He pointed out that the tissue, after immersion in the bichromate bath, remained insensitive until it became dry, and that there was always some difficulty in shielding it from noxious influences, such as

the fumes from gas, during the drying process—influences which tended to render it insensitive when dry. If the tissue were squeegeed to a surface like ebonite or xylonite, it dried rapidly, and the idea of the new method was to dry it so that access of light was impossible during the process. To bring about this result, the tissue was coated on a thick, non-absorbent, non-actinic paper, and after being sensitized it was squeegeed on to a sheet of black enameled iron, and could then be dried in pure air and in daylight—in open air, if required, as long as the sun's heat, which would tend to melt the gelatine, were kept from it.

THE advantages claimed for the new daylight carbon tissue are :

1. That the tissue can be dried rapidly, and, owing to this, is freely soluble.
2. That during drying it is protected from fumes and dust, and in addition can be dried in a purer atmosphere than that of the darkroom or cupboard.
3. That the professional photographer and amateur requiring occasional prints can prepare their tissue and make a print in a comparatively short time without using the darkroom.
4. That it has the advantage, like ordinary tissue, over the ready sensitized, that it can be sensitized to meet the requirements of different kinds of negatives by using a strong bath of bichromate for strong vigorous negatives and a less concentrated bath for weak ones.

WE are often asked as to the best black stain for wood, and without much hesitation we may say that the intense black color which cabinet-makers ordinarily obtain by moistening the wood with dilute sulphuric acid, and gently heating, may be regarded as the purest and the best black obtainable. The following mixture answers well :

Sulphuric acid.....	1 volume.
Water.....	8 volumes.

When cold, add sugar in the proportion of 1 ounce to each 10 fluid ounces.—*Photographic Work.*

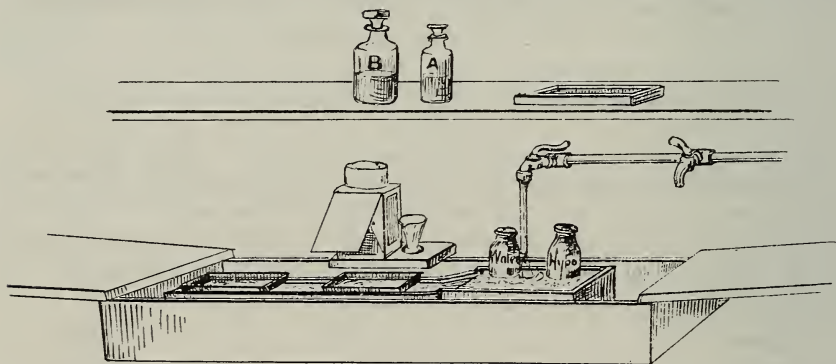
Colonel V. M. WILCOX, president of the firm of our publishers, started on a well-earned pleasure trip to Europe on Wednesday, July 18th, being accompanied by his son, Dr. Reynold Webb Wilcox. A party of friends assembled on the *Germanic* to wish him a pleasant trip and safe return. The Colonel will visit England, France and Germany, and return early in September. He carries with him the best wishes of a large coterie of friends.

W. A. SMITH, of Newburyport, Mass., writes us that he finds volume six of the International Annual a very valuable guide. He makes in his letter the following remarks on development. "For an instantaneous exposure, I soak the plate in the alkaline solution for about ten minutes, and then pour this latter into a graduate into which I have previously placed my pyro. Then pour the mixture over the plate and develop. This I have tried on nearly all the fast

plates on the market, and I find that it gives softer and better printing negatives than any other method. I have tried most of the new developers, but I have not found one of them which for all-round work is equal to good old pyro. To beginners I would say, develop your own plates and carefully study development."

WARM WEATHER TROUBLES.

LIKE all amateur photographers, I suffer with the terrors of warm weather. My photographing is mostly in connection with the business of an industrial establishment in which I am interested, and therefore is only occasional. When a photograph is wanted, however, it is wanted. A year ago we fitted up a new drawing-room, taking the whole upper floor of a building about 40 x 50 feet. I had a skylight put in the roof, and partitioned off a room 12 x 18 for a darkroom. One day this summer, when the draftsman was absent and the room closed, the mercury was at 102 degrees in there, and a frequent temperature with doors and windows open is from 90 to 95 degrees. My darkroom, having no good ventilation, gets hotter than the drawing-room. Of course, everything in it assumes that temperature, and it was not uncommon for the film to wash all to a jelly until I got onto the little wrinkles which I will now



describe, since which time I have not suffered any great inconvenience. When I fitted the darkroom I had a large sink made of wood, lined with lead. I have a water supply from the city mains, and it comes from the tap at 68 degrees.

Last summer I was troubled very much, and attributing it to the warm water, I had a driven well put down, so I could get water at about 58 degrees. But the pumping of all water required with a hand pump lifting about 28 feet is no picnic.

This summer I have improved my methods. I made a small tank, about 14 inches square and 6 inches deep, out of an old box, and lined it with a piece of common table oilcloth. I keep on hand a supply of distilled water from a steam trap, and use it for my solutions. Hypo I also keep in a big bottle, and the hypo bottle and water bottle I keep standing in this little tank. When not in use I put my trays and graduates in there also. That keeps them all clean and cool. I have also a little table 2½ feet long and about 10 inches wide, with raised edges, covered also with oilcloth. This I set in the sink with one end next to the little tank, and an edge of the oilcloth overlaps it, so that the overflow from the tank runs the whole length of the little table. My

developing and hypo tray set on this with their bottoms in a stream of cool running water.

This whole arrangement is shown in the accompanying drawing, and by it, as will be readily seen, I can keep everything down to about the temperature of the water from the main.

Now, when I load my camera on a hot day, the plate and plate-holder are both of the temperature of the air of the room, or may be higher. If I put an exposed plate of that temperature into the tray, which is also warm (as it used to be, and unless the developer is ice cold, it will be quickly warmed up, too) I would have a soft or frilled film. Now, before putting my plate in the developer, even in a cool tray, I plunge it under water in the tank until glass and film are cooled to the temperature of the water.

Since adopting these wrinkles I have had no trouble. Perhaps plenty of other people avoid trouble in the same way, but I have not heard of it.

R. D. O. SMITH.

Correspondence.

THE BURTON ACTINOMETER FOR CARBON PRINTING.

The Editor ANTHONY'S PHOTOGRAPHIC BULLETIN :

In a leading article in your issue for May, I see that you attribute the invention of the Burton actinometer to me. Now, as I do not wish to take any credit that is not due me, I ask you to state that the invention is not mine, but is, so far as I know, that of my friend, Mr. H. J. Burton.

It happens that, in the very same issue in which you describe the Burton actinometer, you mention, in a report of the proceedings of the Photographic Society of Japan, the make-shift way in which I have long made use of the principle of this actinometer. My method of timing carbon prints has, up till now, been as follows: Negatives to be printed from—12 x 10 or larger—are classified according to their density. Of many hundreds of quarter-plate negatives that I have, one is taken corresponding both in density and gradation as nearly as can be judged by the eye, with each of the classes. Under this negative is placed a strip of sensitized albumenized paper, and printing is continued, the small negative and the class of large negatives to which it corresponds being placed together till the albumenized paper is fully printed, when it is assumed that the carbon prints have also had enough exposure. In my experience, spite of all that is said about the great rapidity of carbon tissue, I find that, pretty freshly prepared, it is of just about the same sensitiveness as sensitized albumenized paper, and I have spoiled only a small percentage of carbon prints by either under or over timing. Still the method is clumsy, and, since reading your letter already referred to, I have prepared a Burton actinometer. I do not know by what process the inventor manufactures these instruments, but it may be of interest to your readers if I describe a method that has been successful in my hands.

A negative with a full range of gradation was selected, and from it six transparencies, each measuring $1\frac{1}{2} \times 1\frac{1}{3}$ inches, were made. These were made in the

camera, care being taken to give all the same exposure, and all being developed together for exactly the same length of time, so as to have them of exactly the same density. They were made on slow commercial dry plates, the size $4\frac{1}{4} \times 3\frac{1}{4}$, simply because I had none smaller. The glass was afterwards cut down to the small dimensions mentioned, and the six minute negatives were attached to a quarter plate, there being thus $\frac{1}{8}$ -inch margin. A piece of transparency tissue was then exposed under this composite plate, giving to the respective little negatives exposures to the most brilliant mid-day sun of 5, 10, 15, 25, 40 and 60 minutes, after which the tissue was developed in the usual way. The times given were the result of several experiments to determine what exposures were necessary to get a suitably graded set of negatives. It will be seen that they are not, throughout, either in arithmetic or in geometric ratio, but that the differences in time increase with the exposures.

I consider such an instrument as this a far more practicable one than any in which judgment goes by "tints" only.

I remain, yours, etc.,

W. K. BURTON.

CAMERA AND BICYCLE.

JUNE 28, 1894.

Editor ANTHONY'S PHOTOGRAPHIC BULLETIN:

In the query column of your April number, which has just fallen under my observation, I notice a correspondent asks for information about carrying a camera outfit on a bicycle.

I carry a $6\frac{1}{2} \times 8\frac{1}{2}$ camera, three double holders with glass plates, or six double film holders, lens, Prosch shutter, focusing cloth, level, focusing glass and note book in an army haversack. I fasten tripod, compact folding, on handle bars. Tripod top goes into haversack.

It is better than a grip in frame of machine, as jar is greatly diminished.

I used this plan last summer and am using it again this.

Perhaps your correspondent may be glad even at this late date, to have information based on experience.

Yours sincerely,

F. C. DE SUMICHRAST.

PERMANENCY OF UNDEVELOPED IMAGE.

To the Editor of ANTHONY'S BULLETIN:

DEAR SIR,—In the July number of the BULLETIN, under "Items of Interest," there is a paragraph in reference to the permanency of the undeveloped image, quoting from C. H. Bothamley.

I send a little experience along this line. Only July 4, 1891, I took a little photographic trip, carrying for the day's outing Carbutt's orthochromatic, sensitiveness 23, plates. The exposures made on the most interesting subjects were developed the next day; the others were packed in a plate box and placed in a dry, dark closet drawer, where they remained for eighteen months.

Thinking that they had slumbered long enough to prove, partially at least, that the latent image was permanent, and that orthochromatic plates had keep-

ing qualities, I developed these plates. They gave very satisfactory results. The negatives were brilliant and good printers, and when compared with those developed the day following exposure, left nothing to be desired.

Respectfully yours,

JOS. N. BRADFORD.

AN INTERESTING SUBJECT.

Mr. S. NEWMAN, of New York City, sends us an admirable series of studies,



A Dog on Tricycle.

which show him to be one of the most painstaking and patient of men. Some charming studies of children show unusual skill, but we have thought the subject reproduced here in half-tone to be worthy of our readers' attention. Mr.

Newman tells us that the dog was a stranger who came in with a customer, and who made himself very much at home. Two or three attempts to photograph him failed, but patience and skill were finally rewarded. The exposure was made under the skylight, and was of course instantaneous.

FLASH-LIGHT PHOTOGRAPHY.

A PICTURE BY C. KLARY.

WE are glad to be able to present to our readers so excellent a flash-light picture as that reproduced in half-tone on page 248. Some few months ago C. Klary, who has a large school of photography in Paris, invested in a Williams flash machine, which piece of apparatus has been described in *THE BULLETIN*. He has sent us a lot of 20 x 24 prints of the finest quality. Indeed, in many of them are effects that it would seem impossible to duplicate under the skylight. We reproduce one which we think will please our readers. The balance, along with many other interesting photographs, adorn the walls of our office, and may be seen at any time by those interested.

WILSON'S "CYCLOPÆDIC PHOTOGRAPHY."

A NOTABLE addition to photographic literature is a new book just published by Dr. Edward L. Wilson, under the title of "Cyclopædic Photography." It is a complete handbook of the terms, processes, formulas and appliances available in photography, and is arranged in the form of a photographic dictionary for ready reference. In the preface the author remarks: "Surely the day has arrived when the photographer needs whatever may save his time and assist his revenue, for he must do much more to please his patrons and add to his purse than was required of him a few years ago. He has not the time nor the inclination to search the many valuable treatises upon our art. Illustration and definition must come to his aid." The book is probably the most complete dictionary of photography ever published, and no photographer, be he professional or amateur, can afford to be without it. Every subject is discussed in a terse, lucid manner, the illustrations are many and useful, and the completeness of the book is amazing.

SOCIETIES.

MINNEAPOLIS CAMERA CLUB.—An exhibition of photographs made by members of the Minneapolis Camera Club was given on July 11th, at the rooms of the Club in the American Terrace Building. The pictures included those which have been handed in for competition in the summer contest, being work with the hand camera, and portraiture. A large number of photos were on exhibition, which were greatly admired by members of the Club and friends who are interested in the work. A. L. Eidemiller and H. E. Murdock made a specialty of yachts which they had taken at races of the Minnetonka Yacht Club, while other interesting snap shots were exhibited. J. B. Lee and A. S. Williams submitted some praiseworthy portraits.

The highest mark obtainable in the contest is 300, and marks so far obtained on work are as follows: H. E. Murdock, hand camera work, 278.3; portrait-

ure, 256.7. J. B. Lee, hand camera, 283.3 ; portraiture, 248.3. A. L. Eidemiller, hand camera, 298.3 ; A. S. Williams, hand camera, 236 ; portraiture, 266.7. Other exhibitions will follow during the summer, a general exhibition to be held of all the work at the close of the contest.

PHOTOGRAPHIC SOCIETY OF JAPAN.—At the annual meeting the old officers were re-elected with the following changes and additions : Vice-presidents, Mr. Kajima Seibei, Dr. E. Baelz ; Treasurer, Mr. Ishinzu ; Member of Committee, Mr. K. Ogura.

CALIFORNIA CAMERA CLUB.—The California Camera Club celebrated an anniversary, Friday, July 20th. It was the fiftieth regular monthly free lantern-slide exhibition given by the Club. The subject was Hawaii, the Paradise of the Pacific, and the large hall, seating fifteen hundred people, was so well filled that standing room was hard to find. On this occasion an innovation was made. For the first time in the history of the Club the lecturer was a lady, Mrs. M. L. Gans. She had spent several months in the Islands, and her talk was very different from the usual written-to-order lecture, being chiefly a running account of the habits and customs of the people, and of the striking and peculiar character of the Island scenery. Mrs. Gans possesses a clear and distinct enunciation, and as the slides were well selected and interesting, she held the attention of the audience till the close of the lecture. During two intermissions vocal selections were given.

THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.—Exhibition of Photo-Mechanical Prints and Printing Processes. Exhibition opens November 26, 1894. Exhibits must be delivered on or before November 12, 1894. The Society of Amateur Photographers of New York will hold an Exhibition of Photo-Mechanical Prints and Printing Processes at the Society Rooms, Nos. 111, 113 and 115 West 38th street, New York, from November 26 to December 8, 1894. The exhibition will be open to all the world, and prints from plates made by any process in which photography is employed, as well as the plates and everything used in the process, may be exhibited. The Society will endeavor to make the history of photo-mechanical printing one of the features of the exhibition and will be glad to show prints or apparatus made or used when photo-mechanical printing was a new thing and prints or apparatus made by or used in processes which are not employed at the present time, and, in fact, everything showing the development and progress of photo-mechanical printing. Another feature of the exhibition will be the display of plates and prints in their progressive stages.

During the exhibition, demonstrations of photo-mechanical printing will be given, and papers on matters connected with the art will be read.

There will not be any charge for wall or floor space. Prints may be framed or unframed at the option of the exhibitor. No entry form will be required, but exhibitors of prints are requested to state on blanks, which will be furnished by the Society, the title of the picture ; the name of the exhibitor ; the process by which the picture was made ; the price, if it is for sale ; and, if the exhibitor wishes, a brief account of the print or process. In case of exhibits other than prints, exhibitors are requested to give on the blanks a brief account of the

exhibit. The Society will undertake the sale of prints exhibited and will charge a commission of 10 per cent. on the price.

A committee of experts to examine and report upon the exhibits will be appointed. The report of the committee will be printed and a copy will be sent to each exhibitor.

The Society reserves the right to reject the whole or any portion of any exhibit offered.

All prints, etc., intended for the exhibition must be delivered at the Society rooms, carriage prepaid, on or before November 12, 1894. They should be addressed to Robert A. B. Dayton, the Society of Amateur Photographers of New York, 111-115 West 38th street, New York.

Prints, etc., intended for the exhibition, coming from abroad, if mailable, should be sent by post. The attention of foreign exhibitors is respectfully called to the facts that photographs and photo-mechanical prints when imported into the United States are subject to a customs duty of 25 per cent. *ad valorem* and that the foreign express companies make a charge for brokers' fees and delivery in addition to the charge for transporting goods to this country. The Society does not undertake to pay these duties and charges and will be obliged to decline to receive exhibits unless all duties and charges are paid by the exhibitor. On articles valued at less than \$2 sent by mail, no duty is exacted.

If the number of European exhibitors warrant it, a European agent to collect and forward exhibits will be appointed, and intending exhibitors residing abroad are requested to notify the subscriber of their intention to exhibit as soon as possible so that they may be informed of the name and address of such agent.

At the close of the exhibition the exhibits will be returned to the exhibitors at their expense.

Blanks to accompany prints and any information about the exhibition desired may be obtained by addressing

ROBERT A. B. DAYTON,

111-115 West 38th street,

New York.

NEW YORK, August 1, 1894.

TABLE OF CONTENTS.

	PAGE		PAGE
AN INTERESTING SUBJECT.....	273	SOCIETIES	274
CAMERA AND BICYCLE, <i>by F. C. de Sumichrast</i>	272	THE BURTON ACTINOMETER FOR CARBON PRINT-	
CONVENTION NOTES.....	262	ING, <i>by W. K. Burton</i>	271
CORRESPONDENCE	271	THE ELECTRIC LIGHT IN PHOTOGRAPHIC STUDIOS..	263
FLASH-LIGHT PHOTOGRAPHY.....	274	THE EXHIBITION OF APPARATUS AT THE CONVEN-	
ITEMS OF INTEREST.....	266	TION	261
P. A. OF A. AWARDS	259	THE HAND CAMERA.....	265
PERMANENCY OF UNDEVELOPED IMAGE, <i>by Jos.</i>		THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.	
<i>N. Bradford</i>	272	MINUTES OF THE ST. LOUIS CONVENTION....	245
PHOTOGRAPHERS AT HOME AND ABROAD, <i>by A. L.</i>		WARM WEATHER TROUBLES, <i>by R. D. O. Smith</i> .	270
<i>Bowersox</i>	253	WILSON'S CYCLOPÆDIC PHOTOGRAPHY.....	274



NEGATIVE BY
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STUDIO WORK.

ANTHONY'S Photographic Bulletin.

EDITORS :

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

FREDERICK J. HARRISON.

VOL. XXV.

SEPTEMBER 1, 1894.

No. 9.

THE USE OF FILMS.

THE old photographer is accustomed to look with a certain amount of scorn on the users of films, and to be somewhat skeptical as to the efficiency of anything but a glass plate. It would, indeed, be a difficult matter to find a professional photographer who is using films as a substitute for glass in his ordinary work. Yet the day is surely coming when the glass plate will be discarded in favor of a light, unbreakable, easily stored film. It would seem that all improvements in photography owe their inception and adoption to amateur workers. It is the amateur who creates the demand and generally the means to the end. As regards films, it must be conceded that the amateur, in this country at least, has created a distinct demand for this article; and, if the quantity used (and spoiled) cuts any figure, and it certainly does, has furnished the manufacturer with a sufficient incentive to produce a perfect article.

We are to-day in a transitory state compared with which the change from wet to dry plates seems almost insignificant. Orthochromatic plates are displacing ordinary plates, emulsion papers are ousting albumen paper, the electric light is combating with daylight, color photography does not seem very far off, and flexible, unbreakable films are very slowly but steadily replacing glass plates. The change is not yet, but we believe it to be coming. The advantages of films, their lightness, compactness, and the fact that they are unbreakable, are so obvious that the only surprise is that their adoption has not become general. Professionals long in the business accumulate an immense quantity of negatives, which take up much room and are difficult to handle. Under the film régime these negatives would be stored away in portfolios, alphabetically arranged, and the element of risk would be reduced to a minimum. The amateur has already recognized the immense advantages of films, and considers a roll-holder or a set of cut-film holders the most useful part of his outfit.

Films have received no little condemnation, and their adoption has been

delayed by the same causes that have temporarily blocked progress in other directions. Manufacturers, eager to supply the demand, have manufactured when they should have been experimenting. But we believe that the great trouble lies with the consumer. The beginner nowadays invariably begins with films, exposes them by the yard, with the poorest results. Being the possessor of a camera, he must necessarily be a photographer, and the films must be at fault. The amount of roll film wasted in one year is simply enormous, and the majority of it is wasted through carelessness and ignorance. Films, as made to-day, equal plates in speed and general excellence, and faulty negatives may be set down with considerable certainty to faulty manipulation.

The use of films requires the exercise of more care on the part of the operator than is called for with the dry plate. The roll holder must be studied and the beginner must learn that it is better to put in the film so that the coated side shall be towards the lens. A perfect understanding of every part of the instrument is necessary to success. The proper development of a film is not to be accomplished without due care, even by the experienced hand. Is it any wonder, then, that the tyro fails? He is devoid of all real knowledge regarding development, and the film is blamed where the sole cause of disaster is the ignorance of the operator. Or the films are sent to a factory for development, and are rushed through with results equally disappointing to the would-be photographer. From one or other cause the beginner fails, and it will be found on investigation that the chief cry against films comes from absolute beginners. Experience begets more careful working, and careful handling begets good negatives.

Having cut off the exposed portion of the film, the roll-holder should be at once adjusted, ready for use. If this is neglected, the balance of the film may be spoiled by prolonged exposure to the red light or by the admission of white light, in a moment of forgetfulness. A piece of film corresponding to one exposure is cut off with a pair of long scissors, or by the aid of the film-cutter described in the last issue of the *BULLETIN*. This is then immersed in water, the edges being held firmly, to prevent curling. In a minute or so the film will lie almost flat. The water may now be poured off and the developer applied. Some recommend placing the films in the developer face down, but this seems to us to be at the best a very poor method. A little care in keeping the edges of the film under the solution is necessary while developing, but there is certainly no necessity for developing film side down. There is a tendency with films to stop development too soon. The detail in the shadows should be well brought out, and the general density of the negative should be somewhat intense. After fixing and washing, the film should be immersed for about half an hour in a solution of—

Alcohol.....	8 ounces
Glycerine.....	1 ounce
Water.....	32 ounces

and then pinned up to dry. When printing from films, a backing of stiff paper should always be used in the printing frame.

Many who have not yet used the rollable film have had experience with the cut film. This is a much more rigid article, but possesses the advantages over plates of being light, compact and unbreakable. Cut films are now made

of various speeds, and both brands, ordinary and orthochromatic, may be obtained.

Both rollable and cut films are excellent in quality, and it is largely a foolish prejudice that prevents their immediate, universal adoption.

CRACKED NEGATIVES.

It is, unfortunately, not an uncommon thing to crack a negative, and in nine cases out of ten the crack is across some portion of the plate that is desired. Some day, perhaps, glass will be superseded by some substance, which, while possessing the properties of perfect transparency and absolute inertness, will be free from liability to breakage. Meanwhile, the fact remains that glass will break, and that the photographer must be prepared to meet this contingency. Prevention is better than cure, and all causes of breakage should be known and removed when possible. A fruitful source of this trouble is the printing frame. Unless the frames are properly made, or if a piece of grit becomes lodged in one part of the rabbet, cracking may occur when the back is applied. Often the cause of trouble is the plate itself. It may be of uneven thickness, not perfectly plane, or perhaps too large for the frame. Careless stacking of negatives in heaps and attempting to move them *en masse* often results in cracking or breakage.

To the professional a cracked negative is a serious thing. His negatives are valuable property, and it behooves him to handle them tenderly, stock them carefully, and if by accident any should be cracked or broken, to doctor them at once to prevent further trouble, and to have them ready for immediate service if prints should be called for. If the film has not been broken, the crack should be filled in with Canada balsam, and the plate mounted on a plain piece of glass, to prevent strain and consequent spreading of the crack. If the plate and film have both been broken, lightly dust with a camel-hair brush, to remove all small particles of glass, and then firmly bind the pieces to a second piece of glass. This may in some instances be done with gum paper alone, but a better method is to stretch tightly over the surface a sheet of thin celluloid, turning the edges under and fastening the three, negative, celluloid and plain glass, together with gum paper. If this be carefully done, and the celluloid be tightly stretched, there will be no danger of any of the broken pieces becoming disarranged or slipping.

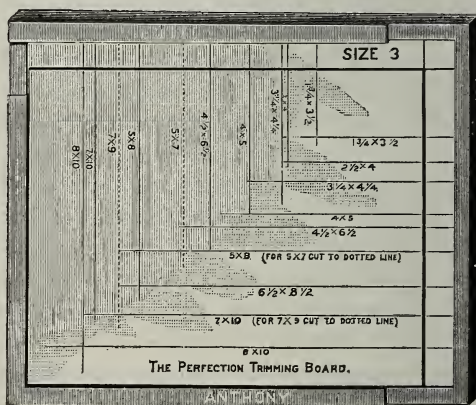
Next comes the question of printing. Many suggestions have been made for the printing of cracked and broken negatives, the general principle of them being to keep the frame in motion. If, however, some two or three thicknesses of white tissue paper are placed first in the printing frame and the mounted negative placed in contact with this, no sign of the crack will be apparent in the print. The quantity of tissue paper required depends, of course, on the color and general qualities of the paper. The proper quantity may be ascertained by placing on pieces of tissue until on looking through the negative all signs of the crack disappear. This method we first saw worked by Mr. F. H. Doyle, of the American Aristotype Company, and have used it ourselves with every success. The mezzo plates to which we have alluded in previous issues of the BULLETIN may be used instead of, or in addition to, the tissue paper. Too little of the diffusing material will not suffice to entirely conceal the crack mark, while too much prolongs the time of printing unnecessarily.

PRINTING.

WE receive a great many inquiries from our friends regarding the making of prints, the general complaint being that it is by no means a common thing to print up a batch of pictures which shall possess the many good qualities found in the output of a professional printing-room. We have in mind many amateurs whose prints are models of delicacy and neatness, but the average amateur, and especially the beginner, turns out a great deal of poor, slipshod work, which, while it gives satisfaction at first, causes no little mortification when contrasted with really good prints. Doubtless part of the difference is due to the negative, but in many cases the poor work is due to lack of knowledge and lack of system. The print requires just as much careful manipulation as the negative, and every detail, from opening the package of paper to burnishing the mounted picture, calls for absolute cleanliness and proper methods. The ready-sensitized emulsion papers, now in almost universal use, are packed so that the sensitized sides touch each other; that is, in a package of one dozen sheets, there are six sets of two sheets with the film sides facing one another. To remove one of the outside pieces for printing purposes means that the next sheet is left film side out and is liable to become finger marked. One of the inner sheets should be taken first. The negative should be carefully dusted and the paper adjusted. Do not blow on the negative. Small particles of saliva may moisten the film and the paper will probably adhere. Always use a pad, either of felt or paper, between the sensitized paper and the back of the printing frame. Avoid using too large a sheet of paper or difficulty will be encountered when examining the print. This examination should be conducted in the shade and should not be too extended, or part of the picture may be slightly tinted. If the printing frame is properly made and if a pad is used there is no danger in turning down the frame when the print is finished. If the back is not tongued and if the pad is absent, a line on the print along the joint will mar the picture. When sufficient prints are made to justify the making ready of the toning bath, they should be carefully trimmed.

Now a great deal depends on the proper trimming of prints. This operation must be done accurately and neatly; clean-cut edges and perfect rectangularity are essential. The Perfection trimming board is a handy instrument for the amateur. By it the print can be trimmed to any size by two cuts, and slipping of the glass-cutting shape is impossible. For cutting, a knife is often used, but is hardly satisfactory, as there is a tendency to move the blade out of the straight line. The little steel wheel cutters that can be bought for 20 cents answer very well.

Always trim prints before toning. In addition to saving gold from the toning bath, it enables one to mount the prints without re-dampening. This



point cannot be too strongly insisted on. Prints that have once been dried have a tendency to curl, and cracking of the film may ensue when an effort is made to mount them. Again a print is, according to our experience, more brilliant if mounted at once. We have often had complaints of the curling up of the edges of the paper after placing on the mount. If the following well-known method is adopted, this trouble will not occur unless the paste is too watery or the prints too damp. Remove the prints slowly from the final wash water so that the greater part of the water may drain off, and lay them one over the other on a sheet of clean glass. Lay a piece of blotting paper or a clean towel over the whole and squeeze out the water with the mounting roller. The prints will now lie limp and damp and will adhere to one another so strongly that the paste, when applied, cannot get on to the face of the print. After pasting the upper one, raise one corner with a knife-blade and place the print in position on the mount. Cover with a blotter and rub down well with the mounting roller. Too much paste is almost as bad as too little. Treat the whole batch in this way, occasionally squeezing out the water in the lower prints if the first attempt at this did not effect it. The prints should dry in plenty of air; that is, they should not be covered up with a blotter or stacked one on the other. Skeleton shelves made by stretching string between four nails are the best for drying purposes.

When the prints are dry, burnish at once. A print that has been allowed to lay around for a day or two will not assume as brilliant a finish as one that is burnished immediately it is dry. See that the burnisher is properly adjusted and have the rolls thoroughly heated. Having a good negative, prints will be clean, neat and worthy representatives of your skill if the above little details are carefully attended to.

To prepare Indian ink, neutral tint or any other color for spotting albumen prints, dissolve $2\frac{1}{2}$ drams of the best gum arabic by rubbing it in a mortar with 1 ounce of distilled water, and add to it 1 dram of alcohol and 15 grains of glycerine. In $2\frac{1}{2}$ drams of this solution dissolve 9 grains of prepared dry ox gall and mix with it the retouching or spotting color. If the spottings are allowed to get perfectly dry, they will stand a tolerably hot burnisher well.

A. H. WALL writes: "Atmosphere is the great harmonizing element of a picture, the chief element of beauty; it is the eye's music, giving order and proportion. It supplies the prevailing tone, high or low, and with it the pervading sentiment or feeling. A rich effect or a simple one may be made to prevail by its judicious introduction, selection or treatment. Without atmospheric peculiarities or characteristics a landscape picture seems flat, monotonous and uninteresting. The photographer who goes to the study of Nature as an artist or a poet does, reverently, with trained perceptive organs, will find the pleasure and delight of his work largely increased, even if he does not realize what Shakespeare calls 'the utmost reachings of his soul.' Sturm wrote well and truly when he said, 'the advantages of reason are never more felt than when our faculties are employed in meditating upon the perfection of God displayed in His works.'"

ITEMS OF INTEREST.

THE use of the electric light in the studio is becoming general, both at home and abroad. Since the St. Louis Convention the interest here has been increased, and the coming winter will doubtless see the installation of this, the most perfect system of artificial lighting, in a great many American studios. The Anthony electric light apparatus is not used with a closed-in, poorly ventilated chamber, but the light is reflected from a screen, and the every-day skylight thus duplicated. No sole rights and privileges are sold with this apparatus. Such are simply a delusion and a snare. The electric light has been tried for many years with more or less success, but it is only within comparatively very recent date that an efficient and portable piece of apparatus has been at the disposal of photographers. At the instructive session of the convention of the Photographers' Association the leading authorities expressed considerable astonishment at the wonderful quality of the light. Indeed, with the electric light for general studio work, and a proper flash machine for out-of-door night work, there is no reason why the photographer should ask Old Sol to do anything but the printing.

A NOVELTY introduced by G. G. Rockwood is the Electrograph, of which more in our October issue.

WE understand that W. Ethelbert Henry is to leave Canada, to take a permanent position on the staff of the *Photogram*. This latter journal is meeting with well-deserved success.

WRITING to the above journal regarding "At-Home Portraits," W. J. Anckorn says :

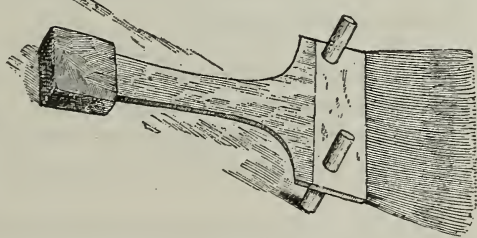
"The great advantage of this work is that it gives the operator a splendid variety of opportunities for artistic lighting and posing. There is none of the restraint and conventionality that almost necessarily pervades the studio. The backgrounds never become monotonous, the accessories are illimitable in their variety, and the truthfulness of likeness is largely insured by the comparative unconstraint of the sitter in home surroundings. The familiar objects of the home add a charm to the resulting picture ; and even if they are less artistically arranged than the studio accessories (which should not be necessary), the result is much more acceptable to the sitter and friends, because the accessories are associated in their minds and memories with the figures they surround."

"I now consider that the studio is not nearly so much wanted as it used to be, for almost any effect of lighting can be obtained in a drawing-room. The exposure will, of course, vary much more greatly than in the studio, for the actinic value of the light is greatly affected by the surroundings, aspect and position, as well as the mere size of the windows ; but a very little experience will make the worker familiar with the lighting power of various windows, and enable him to at once place the sitter in the best position, and to calculate the necessary exposure. The coloring of the paper, carpet, furniture, etc., must be considered, for they largely affect the lighting of the shadow side. The exposure should be full rather than short, and the development slow and tentative. I do not advocate rapid plates, but prefer an ordinary studio working brand with good

body of emulsion. The negatives made in 'at-home' work are often much harsher than those made in the studio, and require specially careful printing; but the results pay well for the extra attention. During the past few months I have secured several very profitable sittings, some of which were of people who have never visited a studio in their lives, and one or two are old persons practically unable to be moved. A very successful recent one was a portrait of Professor Reid, of Forfar, whose age is ninety-one. As Forfar is twenty miles away from my studio, this sitter would probably have never come to me, even if he had not been prevented by his age from caring for such matters. But having once taken the negative, the Professor has given orders for some hundreds of cabinet copies, which he will give to his enormously large circle of friends. This is only a fair type of a very great number of sittings that have been secured in my comparatively isolated district."

In an English catalogue we find the following hint for the storing of negatives: A piece of white paper is cut so that when folded it makes an envelope. The front of this envelope is coated with ferro-prussiate solution and a print made thereon, additional memoranda being written in one corner, which is kept from printing by the interposition of a piece of opaque paper during printing.

A GOOD idea for keeping the dusting brush clean is given in *The Amateur Photographer*: Two wooden pegs, 1 inch by $\frac{1}{4}$ inch, are fixed one on each side of the handle, as shown in the cut. At the top end of the handle is fixed a piece of sheet lead by means of a screw ring. A brush with these additions may be laid down on the darkroom table without fear.



DR. E. L. WILSON'S new book, "Wilson's Cyclopædic Photography" is meeting with much success. At the recent Convention not a few photographers were to be seen poring over its contents.

THE Photographic Salon, 1894, second year, will open at the Dudley Gallery, Egyptian Hall, Piccadilly, London, England, on Monday, October 1st, and remain open until November 3d. No awards are offered and no charge is made to exhibitors. Pictures sent in packing cases must be delivered at Messrs. Polak & Company, 63 Wardour street, London, W., not later than September 20th. Entry forms may be obtained from the BULLETIN.

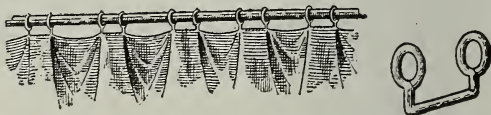
THE Photographic Society of Great Britain will henceforth be known as "The Royal Photographic Society of Great Britain." This by the Queen's command.

SOME slight inconvenience has hitherto been felt by users of exposure meters in exactly matching the standard blue tint. This difficulty is overcome by placing a piece of blue glass over the sensitive paper. The red color in the

darkening, sensitive paper is thus cut off, and the difficulty of judging the tint removed.

SOME handsome chrome-artotypes have just reached us from E. Bierstadt, of New York. They are reproductions of multi-colored rugs, and are simply perfect. Nothing finer has yet come our way. We do not know the expense of such reproductions, but venture to assert that the salesman carrying them has "talking samples."

ANOTHER good idea from the *Photogram*: "If you use curtains in your studio you know how the rings catch and bind on the wires, and how you have to jerk the curtains or poke them with a rod to move them. You know how this treatment is constantly causing them to be torn from the rings and to hang untidily. Here is a form of ring that can be made by any one with a pair of round-nosed pliers and wire. It always runs freely and easily, and cannot bind."



THE usual howl against the Photographers' Association of America is made in the same old quarter. Some people cannot belong to an organization unless they are constantly receiving honors, more or less deserved. When, for various reasons, they are treated just as ordinary individuals, they write nasty criticisms and start rival organizations.

DESPITE the fact that certain prejudiced parties try every year to hold up the Association to scorn and ridicule, all who were at St. Louis know that the 1894 Convention was an immense success, and know further that the Photographers' Association of America will be in as good shape next year as it ever was.

THE *St. Louis and Canadian Photographer* indulges in much criticism and tries to raise a wall between manufacturer and consumer. The two have vital common interests, and the builder of the wall will have as much success as a child attempting to stop the waves with his tiny sand bank.

SECRETARY RÖSCH deserves the thanks of the entire fraternity. He devoted his whole time and energy to Association work, and the result was the most successful of conventions. We have read of one man who was not satisfied with Rösch, and he probably is one of those who kick for the pleasure of it.

IN answer to a correspondent who writes of the timidity displayed by the subject when before the camera, *Cassell's Saturday Journal* remarks: "It is probably a form of nervous self-consciousness, yet persons, very far from timid in other respects, shrink from exposing themselves to the camera. Even when they have summoned up sufficient courage the resulting photograph often shows only too plainly the traces of the struggle that has taken place in their minds. Why not start by getting an amateur friend to take you? If the result proved successful you would probably feel less nervous in the studio."

ON this subject, *The Optician* says: "A certain professional photographer

sets up side by side with the lens of his portrait camera a large plane mirror (an ordinary looking-glass). The sitter observes his own image in this reflector, and, when he has composed himself to his own satisfaction, presses a minute spring contact attached to a flexible wire. This is the means of electrically releasing a shutter set up for an automatic exposure of the proper length of time. It is said, but we give the statement for what it may be worth, that some nervous and self-conscious sitters prefer themselves to give the signal, as it were, for the exposure in this way, rather than to undergo a more prolonged period of mental suffering in expectation of one that may or may not happen to catch them at a disadvantage."

WITH deep regret we learn of the death of W. H. Masters, of Blue Mound, Kans. Mr. Masters was seventy-one years old, and had been a photographer for over thirty years. He died of Bright's disease, on August 8th. Our sincere sympathy is tendered to his widow, who for the last fifteen years had helped him in the gallery.

WE have also to record the death of Henry E. Insley at his residence at Nannet, N. Y., on August 7th, at the advanced age of eighty-three. He was the oldest photographer in America, if not in the world. He began business at the corner of Broadway and Fulton street, in 1840, being associated with his brother-in-law, the late Geo. W. Prosch, under the firm name of Insley & Prosch. In later years he moved to Jersey City. He used double mirrors for reflecting sunlight into his studio, and also blue glass for softening the light. He also patented the process for the "illuminated daguerreotype," a vignettted bust surrounded by a colored halo. He took the first instantaneous picture of a man walking in the street, which picture was noticed in the New York *Sun* of that time.

"CYCLOPÆDIC PHOTOGRAPHY" improves on acquaintance. It is a most valuable book of reference, and we advise every photographer to invest in a copy. There has recently been circulated a story regarding the book which is likely to lead to some misunderstanding. The BULLETIN, as usual, happens to be in possession of the facts of the case, and can assure its readers that the story is without foundation in fact. A glance through the book shows that it is right up to date, and that new theories and methods are fully discussed. Almost every subject is treated, and the matter bears evidence of careful writing by one who has kept himself thoroughly posted on all recent developments in photography. The story alluded to above is obviously fostered by one who is not familiar with the truth of the case. We congratulate Mr. Wilson on the completeness of his work, and predict for the book an enormous sale.

WRITING on the keeping qualities of plates, Horace P. Chandler writes that he has recently exposed some Carbutt B plates, made in 1887, and obtained excellent negatives.

THE seventh volume of the "International Annual" promises to eclipse all its predecessors. Never before have so many prominent authorities contributed

to one publication. Bigger, brighter, better, was the motto last year. It is not easy to find one for volume seven.

WE reproduce in this issue of the BULLETIN S. L. Stein's picture which won the genre prize at the St. Louis Convention. We would advise our readers to study first the general effect of the picture and then each individual subject. Mr. Stein is to be congratulated on his excellent study. It is interesting to know that the negative was made with the aid of the Williams flash machine, which it will be remembered was also used by Mr. Place for the "special prize" picture reproduced in our August issue.

THE bronze medals in Classes F and G at the St. Louis Convention were awarded to McCrary and Branson, of Knoxville, Tenn. Their exhibit was marked xxx, and the name did not appear in the official report in our last issue.

A CAREFULLY prepared handbook for professional and amateur artists, written for those who desire to take up crayon work, is Barhydt's "Crayon Portraiture," of which a revised and enlarged edition has recently been issued. The coloring of photographs, engravings and photogravures with liquid water-colors and the making of French crystals are also treated. The book contains full instructions for the making of crayon portraits on crayon paper, and on platinum, silver and bromide enlargements.

ON Saturday, August 11th, Mr. Pirie MacDonald, of Albany, gave a private exhibition of his Convention prize pictures, together with the prizes awarded him by the Photographers' Association of America. Mr. MacDonald, it will be remembered, secured the Cramer Cup and the first prizes (gold medals) in the two most important classes, A and C. He was, by acclamation, elected secretary of the Association.

THE authorities of the Imperial Institute, London, organize each year, in addition to the permanent attractions in the building, a special exhibition of the products of some particular industry. This year the china and glass industries have been represented. In 1895 the feature of the year will be photography.

THE first number of *The Junior Photographer*, published by Percy Lund & Co., of Bradford, England, has just come to hand. As its name indicates, it is a magazine for the beginner, and will, we believe, meet with considerable favor. There are but few photographic publications that are of use to the average amateur, the usual run of articles being of such a character that they are of benefit only to a few specialists. The newcomer will encourage and interest the anxious learner and deal with photography from a popular point of view.

ALL communications for publication in the October issue, all new advertisements and matter connected therewith, must reach us not later than September 22d.

MAGNESIUM POWDER.

IN an interesting article in the *Photo-Gazette* on the disadvantage of using too fine a powder, H. Fourtier writes that the majority of authors have insisted on the necessity of using magnesium reduced to a very fine powder, some even advocating its reduction to an impalpable dust. In an interesting series of experiments which he has recently been conducting, this matter has been considered. The powder of commerce consists of quite regular particles, which, under the microscope, show as elongated, irregular grains, with blunt edges. A good powder should have a graphitoidal appearance, the points being very brilliant. If the powder is whitish, the metal has been partially oxidized and its actinic power is decreased. Magnesium powder is prepared by two different processes. By one the metal is reduced to filings by means of rapidly rotating drills. Under the microscope this appears as small, irregular-shaped shavings. By the other method, the metal is heated, in a non-oxidizing atmosphere, to a point approaching fusion, and is then suddenly cooled. On the least jar the metal separates in a crystalline powder, which, by suitable sieves, is separated into grains of various sizes. Being assured by a friend that the coarse powder gave better results than the magnesium dust, experiments were made to determine if such was the case or not. A part of the coarse powder was reduced to dust by moistening it with alcohol and grinding. On evaporation of the alcohol, a fine, impalpable dust was obtained. In the investigation four objects were aimed at: 1st, to determine in which form the best flame was produced; 2d, what volume of air and force of propulsion were necessary to obtain a good flame without loss of metal; 3d, the rapidity of the combustion; 4th, the luminous intensity to a given weight of powder. The results showed that the commercial powder gave better light than the magnesium dust. The photographs of the dust flame showed a series of small burning particles projected outside of the burning mass. The flame was not as compact as with the powder of commerce.

Regarding the projection, the commercial powder requires much less pressure and a smaller volume of air. If this powder is too suddenly projected, part of it is lost, because the powder has passed through so quickly that it has not been heated to the point of ignition. The temperature of the flame has a considerable bearing on the subject. In the order of their value the flames used are candle, alcohol, petroleum, gas, benzol, Bunsen flame, oxyhydrogen jet. With the candle flame the loss may easily reach 50 per cent. The magnesium dust requires a sudden pressure. With but feeble pressure it is not properly projected from the tube, and small incandescent balls of powder fall on the flame. With a flame of low temperature and with a feeble pressure, the rapidity of the flash of commercial powder varies between 0.75 and $1\frac{1}{2}$ seconds.

But in the lighting power of the two degrees of coarseness of powder a great distinction is found. The light furnished by the fine magnesium powder is found to be very greatly inferior to that of the powder of commerce. The fine powder is more easily oxidized. A loss of only 8 per cent. of metal was found with the coarse powder, while the dust showed a loss of 40 per cent. The experiments made all show that magnesium powder should not be ground too finely. M. Mareschal recommends also the passing of the powder through a sieve just before exposure, to destroy any small lumps that may have formed by the adhesion of the particles.

A very interesting article by M. Fourtier, on the quantity of powder to use and the best way to use it, will be found in the seventh volume of the "International Annual," which will be issued in a few months.

SCENES IN THE CITY.

MANY city amateurs will frankly admit that they have not won any exhibition medals because they have not time to go to Potsdam or other distant rural places where Nature furnishes prize views.

The accompanying picture of a railway station will at once suggest such a country place, and the timeless camerist will own that there, or thereabouts, he could bait traps for more medals than the committees could have struck off in a year.

The two cars indicate that the spot is on a small branch line, and the meagre attendance to welcome the train further bespeaks a district but sparsely settled.



Such surmises would be literally correct, and yet any busy Gotham amateur who might suddenly find himself at liberty, say about 2 o'clock some pleasant afternoon, feeling at the same time the divine afflatus of pose and composition welling into his soul, might start for this drowsy country depot, spend two hours in its neighborhood, and be back by 5 o'clock.

In its immediate vicinity the photographer can find almost any combination he has a bent for.

For water views there is the river with little wooded promontories, and stretches of black rocks over which the surges of the big steamboats dash in ocean style, throwing the foaming spray upward 15 and 20 feet.

The formation of the river's bank also admits of pretty lake shore effects.

For landscapes there are tortuous roads, magnificent trees, vine-covered old houses, and stately mansions with parks and gardens, with, in nearly every one

of them, a docile cow warranted, for the benefit of the Daughters of Daguerre, not to take personal offence at a crimson parasol or ribbon.

The camerist will, in fact, see no evidences of the city he is in, save here and there a lamp post.

Even the sounds are all country sounds—the comments of the cows and cocks, and the notes of wild birds and the sighing of the trees.

For use in genre compositions there is an old-time dry goods peddler's wagon continually prowling about, and it will be found very handy, as, during the present general business depression, the proprietor is quite willing to "bide a bit" and turn it in any direction.

The sides of the wagon are conspicuously lettered, but the peddler will cheerfully let down the hinged flap at the rear, and pull out the drawers and toss about any number of rolls of parti-colored stuffs, so as to make the picture "a story without words," if one does not want to rely on the aforesaid lettering.

The railway station is at 170th street and the Hudson River, and the picture was taken with a \$15 Hawkeye hand camera; the graining in the telegraph pole proves that the lens is all right, and that the trouble with the cow-catcher is due to Mr. Depew's violation of a city ordinance, which Mr. Vanderbilt ought to speak to him about.

JAMES REUEL SMITH.

RETOUCHING LANDSCAPE NEGATIVES.

IN his excellent work, "La Photographie en Montagne," E. Trutat makes some comments on the retouching of landscape negatives that may be useful to our readers. He writes: "The retouching of landscape negatives cannot be compared with that of portraits. We must be satisfied with stopping out judiciously the under-developed shadows by applying to the back of the negative some coloring matter. For this purpose a collodion containing $1\frac{1}{2}$ per cent. of cotton is colored with aurine or fuchsine; a concentrated solution of the dye in alcohol is made, and the collodion is colored with it to the desired extent. The back of the negative is coated with the collodion, care being taken that none passes under on to the film. When the collodion is thoroughly dry, that part of it which is over the dense portions of the negative is removed by means of a pointed stick. The light is thus retarded in the shadows, that is, the most transparent parts of the negative, and a more harmonious print results.

"Pinholes that may be found in the gelatine film should be filled up by means of a pointed brush dipped in ivory black, making the color of the same density as the adjacent parts of the film.

"Sometimes these spots may be so numerous as to make it of advantage to entirely block out the sky. The best way to do this is to paste on the back of the negative a piece of black needle paper cut roughly to the shape of the sky line of the image. Then, with a brush, a coat of ivory black is applied on the film itself. This operation is made more easy, and may be conducted more accurately, on a retouching stand.

"Defective skies may be considerably improved by spreading a coating of lampblack on the back of the negative. This may be done by holding the plate over the flame of a tallow candle until the black is thick to opacity. With some care the lampblack may be made to thin out towards the horizon. When the

coating is satisfactory, the lampblack which encroaches on the image may be removed by means of a pointed stick covered with a piece of cloth. This coating is, of course, very delicate, and should be renewed from time to time, but by this means the harshness of the former method which destroys all perspective effects is avoided."

Instead of collodion or ivory black, the Strauss marl, to which we have often made allusion, may be used. This is ready prepared, and is not messy.

PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

DIPLOMA AWARDS.

Grand Prize Class.—George Steckel, Los Angeles, Cal.; G. M. Elton, Palmyra, N. Y.; W. J. Root, Chicago, Ill.

Genre Class.—Knaffl Bros., Knoxville, Tenn.

Special Class.—A. N. Lindenmuth, Allentown, Pa.; George H. Hastings, Boston, Mass.

Class A.—Arthur & Philbric, Detroit, Mich.; F. M. Somers, Memphis, Tenn.; — Aldrich, Buffalo, N. Y.

Class B.—Gilbert & Bacon, Philadelphia, Pa.; McCrary & Branson, Knoxville, Tenn.

Class C.—Gilbert & Bacon, Philadelphia, Pa.; R. P. Bellsmith, Cincinnati, O.; J. A. Brush, Minneapolis, Minn.; F. M. Somers, Memphis, Tenn.; Van Loo & Trost, Toledo, O.

Class D.—William C. Peck, Newburgh, N. Y.; C. Lane, Brooklyn, N. Y.; E. M. Hall, Buffalo, N. Y.; S. Newman, New York City; A. C. Noviss, Mount Clemens, Mich.; Townsend, Gray & Knapp, Paterson, N. J.; Harman & Verner, Bay City, Mich.; Carl Thiel, Duluth, Minn.; E. E. Shores, Vincennes, Ind.; F. W. Webster, Des Moines, Ia.; — Hamilton, Grand Rapids, Mich.; E. M. Bolton, Rockville, Conn.; H. J. Brady, Orange, N. J.; George W. Davis, Portland, Ore.; — Van Norman, Springfield, Mass.; — McCollin, Greenville, Ill.; W. F. Johnson, Picton, Ontario; — Morriss, Pittsburgh, Pa.; Lathrop & Cunningham, Providence, R. I.; J. A. Barnes, De Soto, Mo.; — Gilbert, Frankford, Ind.; J. G. Nussbaumer, Buffalo, N. Y.; — Breneman, Marion, Ia.; Tomlinson Bros., Hannibal, Mo.; Notman Photo Company, Boston, Mass.; C. S. Seabold, Flint, Mich.; Moore & Neisie, Seneca Falls, N. Y.; I. & M. Steinberg, New York City; F. Zivney, Milwaukee, Wis.; Thomas Stout, Unionville, Mo.; F. A. Coyle, Cedar Rapids, Ia.; H. W. Minns, New London, O.; — Townsend, Lincoln, Neb.; David Rosser, Pittsburgh, Pa.; George Schmitt, Cincinnati, O.; — Aunne, Portland, Ore.

Class G.—A. L. Bowersox, Dayton, O.

Class J.—James Inglis & Sons, Chicago, Ill.

Class L.—E. Long & Son, Quincy, Ill.

Class M.—G. Meisser, Switzerland.

Foreign.—K. Schwier, Weimar, Germany; W. Wilcke, Hamburg, Germany.

Class N.—E. & H. T. Anthony & Co., New York City; Dorticus Manufacturing Company.

Class O.—George Steckel, Los Angeles, Cal.

LANTERN WORK.

THE optical lantern has barely had time to get dusty, but, all the same, it will be better for a thorough overhauling. In these days the lantern is used for nine months out of the twelve, a sign of its popularity. Society meetings begin this month, and where is the society but has a lantern and regards it as the greatest attraction? The society lanterns are usually always in good order, but the lantern of the private individual is too often put away dirty, and will require a little repairing and no little cleaning. Condensers and lenses must be well polished with chamois, the soot removed from the chimney, and the air holes freed from caked dust and oil, so that the ventilation may be as good as possible. Wicks will be found jammed and screws tight, where, if a half hour had been spent last May, everything would have been in first-class order. Still, it has to be done, and, to ensure success, done well.

The majority of our readers doubtless possess oil lanterns. Electric light and the oxyhydrogen jet are not necessary for household use. The smell of oil lanterns is apt to be objectionable, but proper care will reduce the odor to such an amount as to be hardly appreciable. Cheap oil means bad smell. Use the best oil, and get a maximum of light and a minimum of odor. Mr. Bickerdyke, in the "International Annual" for 1891, recommends the emptying out of any unused oil as soon as the lamp has cooled after use. He says "much of the smell is owing to a thin film of oil which always spreads over the top of the reservoir of the lamp if any oil is left in it. The heat inside the lantern evaporates this oil and causes a good deal of smell. The reason for emptying is therefore easily understood. But even this precaution is insufficient. There will still be a little oil on the top of the reservoir. I sprinkle the top of the reservoir with camphorated chalk, which takes up any oil which would otherwise lie on the metal, and the camphor in the chalk seems to have the effect of deodorizing the oil." After using, the wicks should be turned down low to prevent oil working up and out.

If your lantern is in a dirty condition—really dirty—clogged with oil and greasy matter, it is useless to attempt to clean it by merely wiping with a rag. Prepare a good tub of hot soapsuds, add a little common washing soda, and, using an old scrubbing brush, get rid of every particle of dirt, winding up with a good rinse under the tap. Test the wick screws and see that they are not bent, but that they work easily.

Does your lantern smoke? Then you have insufficient ventilation. Open up a little the air holes and see that the chimney is clean. The lantern is a source of great entertainment and instruction, but a clumsily managed, ill-smelling lantern is a nuisance to everyone. Keep every part scrupulously clean and understand the instrument thoroughly.

To get the most out of a lantern, the Rev. R. C. Bodkin gives the following directions: "Place the light so that the center of the flame may be as nearly as possible opposite the center of the condensing lens and about 2 inches behind it. Adjust the focusing lens so that about one-half of it is inside the tube and one-half outside. This gives most play for adjustment. Now put in your picture, upside down of course, and move the front lens in and out of the tube till you get the best rough picture you can on the screen. When this is done

move back the light in the lantern in a straight line till the brightest picture is obtained. Next see if the picture is equally illuminated everywhere, especially at the sides and edges. Should there be a dark edge at the top of the picture, raise the light; should it be at the bottom of the picture, lower the light; should the dark edge be at the right-hand side, move the light to the left, and so on."

LANTERN SLIDES AND TRANSPARENCIES.

PHOTOGRAPHERS, as a rule, and amateur photographers in particular, know almost as much about the reduction of bromide of silver as does the man in the moon about riding a bicycle. During a conversation with an amateur a few days since I touched on the subject of bromide plates and had an attentive listener, the amateur supposing that the bromide plates I referred to were something new on the market, and, desiring to know where they could be bought, he was quite disgusted upon learning that the bromide plate and the "dry" plate were one and the same thing.

I do not here propose to enter into any discussion relative to the chemistry of the reduction of bromide of silver, but I desire to draw attention to some results that I recently obtained on "dry" plates, which will no doubt be of value to a great many. If you have ever exposed a dry plate in a camera to bright light for a period of, say, six to ten hours, you will have obtained what is known as a solarized plate. That is, you will have reduced the bromide of silver in your dry-plate film, and will have secured just a trace of a darkened image. But solarization is a form of photographic acrobatics without practical value. Very few photographic workers know, and a great many more would not believe, that a dry plate undergoes any change of color, excepting during the course of development by reducing agents. If any of these were asked whether they ever printed on a dry plate, no doubt they would consider the questioner a fit subject for the "Home for Insane Photographers"; and, in fact, I was told as much when I made the suggestion to a professional a short time since. But that is just what can be done, and a dry plate can be printed on the same as a piece of sensitized paper. I have in this way secured some of the finest transparencies and lantern slides that one could wish. If any one cares to try it, go about it in this way: Take your negative and place it in a printing frame, as though you intended to make a paper print, then place your dry plate, film side down, on the negative, clamp your back board and put it out in sunlight to print. The time required will, of course, depend upon the density of the negative, but I find that an exposure of from four to eight hours answers very well. The nice part of this process is the ease with which, with a little experience, you can tell when the print is sufficiently dark. The image shows quite plainly through the glass back of the dry plate, and the exposure can be most easily regulated by, from time to time, taking a look at it. Of course, the whole process can be conducted in weak, diffused light, the same as employed in paper manipulation. After the print is secured it can be toned in the regular way, with gold, thus obtaining the various gradations of color as with a paper print.

What recommends this process particularly is that the slower the emulsion of the dry plate, the better the resulting transparency will be, and who that does



"SEBEN, COME 'LEBENI!"

any photographic work has not a lot of slow plates on hand that he doesn't care to use, or a box of plates that have been accidentally exposed to actinic light? Again, photo stock dealers always have a lot of old plates on hand that they will almost give away to get rid of, and they answer the purpose just as well as any others. I had a dry plate which had accidentally been exposed to light, and which I thought had become worthless, which I then used to trim my prints. I trimmed prints with that plate for almost two years, but I do not trim with it any longer. I printed on it and got a transparency as a result which I would part with with regret.

EDW. WEINACHT.

JOTTINGS FROM GERMANY.

International Competition for the Best Photographic Representation of a Drop of Water During its Fall.—Under the auspices of Captain Abney, E. J. Marey, J. Janssen and Dr. J. M. Eder, the *Revue Suisse* has organized a competition having for its object the determination by photography of the exact form of a drop of water while falling. The liquid used should be distilled water, and the temperature in degrees Centigrade should be noted. The water should fall from a glass or metal tube, the interior and exterior diameters of which must be measured. The fall should be so regulated that one drop falls each second. The size of the photograph is optional, but precedence will be given to those of the natural size of the drop. The photographs may be made on glass, film or paper, and must not be retouched. They must be delivered on or before October 15th to Dr. E. D. Demole, Place du Molard, Geneva, Switzerland. Gold, silver and bronze medals and three diplomas will be awarded.

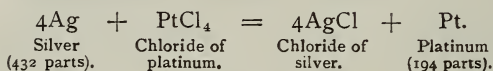
Large Lenses—Fog.—It is often found advisable when photographing very distant objects to use a lens covering a much larger plate than the camera that is in use is adapted for; for example, a 10 x 12 lens on a 5 x 7 camera. By this means a larger image of an object is obtained than would be the case were the 5 x 7 lens employed. Now the central part of the image formed by the lens impinges on the plate, but the rest will light up the sides of the camera, and will often fog the plate. To avoid such trouble a diaphragm should be used, but not of the form generally applied to lenses. This diaphragm is a small black frame, made of wood or tin, and so arranged that it will cut off only the outside rays, admitting the passage of all those rays which ordinarily would reach the plate were no diaphragm used. The frame is best placed about midway between front-board and ground-glass. The size of this diaphragm or cut-out is of course governed by the size of the lens.

Daguerre Medals.—E. Valenta and H. Lenhard have been awarded silver Daguerre medals by the Camera Club of Vienna for meritorious work and researches in photography.

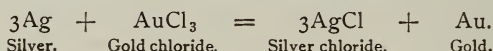
Platinum Prints.—The temperature and degree of concentration of the developing solution influence the tone of platinum prints. The arrow-root subcoating gives rise to brown tones, gelatine sizing to black tones. Sometimes, even with a gelatine subcoating, brown tones prevail. This may be due to the strongly acid character of the potassio-chloride of platinum employed. If a

neutral salt is used, the tones will be less brown. Sometimes, however, the gelatine subcoating is at fault. With a sized paper bought from a dealer, brown tones prevailed. Fresh sizing gave black tones. The mixing of oxalic acid with the sizing is not recommended. The platinum solution sinks in too deeply, causing monotonous black tones without half-tone. To counteract the acid action of the platinum salt, ammonium oxalate and ammonium ferric oxalate were tried. Black tones were obtained, but too large a quantity of ammonium oxalate caused a loss of brilliancy in the print (A. Lainer).

Platinum Toning.—From Liesegang's *Photo Archiv* we cull the following:
 "The chemical change occurring when a silver print is toned with platinum is expressed thus—



A single atom of platinum replaces therefore four atoms of silver. The picture loses in strength, 194 parts by weight of platinum not possessing the covering-up power of 432 parts of silver. In gold toning the difference is not so great, only three atoms of silver being replaced by one of platinum:



"The atomic weight of gold is 196.7, so that 324 parts of silver are replaced by 196.7 of gold. In addition it must be remembered that in gold toning not more than one-fourth of the silver is replaced by gold. The mixture in the proportion of one atom of gold (blue) to four or five atoms of silver (red) produces the ordinary photographic tone. With platinum toning it is necessary that platinum alone shall form the picture. If very hard negatives are used, the pure black of the platinotype may be readily obtained. But with soft negatives which would give good results with gold toning, no good results can be obtained with the ordinary platinum toning process. How can this trouble be met? We have repeatedly pointed out that with printing-out silver chloride papers harder negatives are obtained by physical development with nascent silver. The paper must be fairly strongly printed out and intensified with hydroquinone developer. In the shadows considerable silver will collect, while the high lights remain free. Such pictures will tone well with platinum. The fact that all the silver has to be replaced by platinum to obtain pure blacks changes the process of platinum toning essentially from that of gold toning. The pictures may be left in the bath for some time after toning is apparently complete, and no reduction of density occurs in the fixing bath. Before the print is placed in the platinum toning bath, all free silver nitrate must be washed out or the bath will be decomposed with formation of nitrate of silver. After toning and before fixing, the print must be well washed."

Residues.—A simple method for recovering gold and silver from washings is to add strong muriatic acid and to immerse in the solution a strip of aluminum. The gold precipitates as a brown powder, and the silver as silver chloride.

Artistic Fuzziness.—To produce an artistic fuzziness over the picture, Herr A. Bushbeck, of Vienna, fixes a metal netting made of brass wire in front of the

lens. The netting is made of wire 0.28 mm. thick and a mesh width of 0.72 mm. The net is immersed in nitric acid and heated to blacken it. This process gives a uniform soft and harmonious indistinctness over the whole plate, the straight lines are not interfered with, and the loss of light is insignificant.

Water Varnish for Plates and Films.—Dissolve 40 grams of bleached shellac in 80 c.c. of alcohol, to which add 60 c.c. ammonia and 100 c.c. of boiling water, and 2 to 3 c.c. of glycerine. Allow to stand and pour off the clear liquid for use. The washed film or plate while yet wet is laid for some minutes in a tray filled with this varnish. It rapidly penetrates the gelatine film.

THE INFLUENCE OF GELATINE ON THE DOUBLE DECOMPOSITION OF SALTS.

If aqueous solutions of silver nitrate and potassium bromide are mixed in proper proportions, silver bromide and potassium nitrate are formed, the former precipitating in a cheesy form, while the latter remains in solution. In the presence of gelatine this reaction is retarded and may even be almost entirely suspended. If the aqueous solution of silver nitrate is added to a solution of potassium bromide in a gelatine solution, as is customary in emulsion making, the liquid becomes milky, a very fine precipitate being produced, the grains of which vary little in size during the ripening process. If, on the other hand, the silver nitrate also is dissolved in a gelatine solution and thus added to the gelatine solution of potassium bromide at a temperature of 37 degrees Cent., the liquid will only become opalescent, and is entirely transparent in thin layers. Such a mixture was used by the writer in 1890 for the production of grainless plates. Recently the Lumière Bros. have used a similar emulsion for their first portraits in natural colors after Lippmann's method.

It is supposed that the silver bromide in the mixture mentioned exists in the colloidal condition, and this is to some extent correct; it can, however, be easily proved that part of the salts are present as free silver nitrate and free potassium bromide. If such a mixture, produced with a slight excess of potassium bromide, is left to cool in a porcelain dish and is then covered with distilled water, the salts contained in the gelatine will diffuse into the water. As colloidal substances do not so diffuse, the colloidal bromide of silver cannot pass into the water. If, therefore, a complete double decomposition has taken place, the water above the gelatine should remain clear, as it could only contain potassium nitrate and the small excess of potassium bromide. But this is not found to be the case. The water is gradually discolored, a considerable quantity of bromide of silver apparently growing out of the gelatine. Silver nitrate and potassium bromide must therefore have diffused from the gelatine, and, after reaching the water, have reacted with the formation of silver bromide. Evidently, then, in the gelatine solution, silver nitrate and potassium bromide can exist side by side without change, although it is generally accepted that colloidal silver bromide is soluble and capable of diffusion, passing into the water in the globular state. It would seem that the gelatine encloses the molecules of the salts and only permits a partial contact. The double decomposition will therefore proceed more slowly in proportion as the quantity of gelatine is increased, which is found to

be actually the case in making emulsions. It may further be accepted that the decomposition after a certain time becomes complete, though the diffusion throughout the gelatine is slow. The above experiment shows that grainless emulsions should stand as a jelly for some twenty-four hours before washing, as otherwise a considerable part of the silver will be washed out. A similar state of things was observed by the writer with barium chloride and potassium sulphate. The decomposition in the presence of gelatine is quicker when the diffusing power of the salts used is great, and slower when the proportion of gelatine is increased.

J. GAEDICKE.

GABRIEL LIPPMANN.

[From the Photogram.]

UNDER the above heading M. Alphonse Berget, the pupil and fellow-worker of the great French scientist, has written a biographical sketch which is full of interest, and of which I give a brief abstract. M. Berget is well acquainted with and a firm believer in M. Lippmann. He is therefore able to show him in his scientific capacity and as an eminently attractive personality. Their first meeting was in 1886, when M. Berget, who was then studying at the Sorbonne, in Paris, ardently desired to consult the already celebrated professor on his scientific ambitions. Requesting modestly to work in the laboratory of M. Lippmann, he was not only kindly received, but thanked for his confidence and wish to be assisted. Such a reception evidently won the heart as well as respect of the aspiring student.

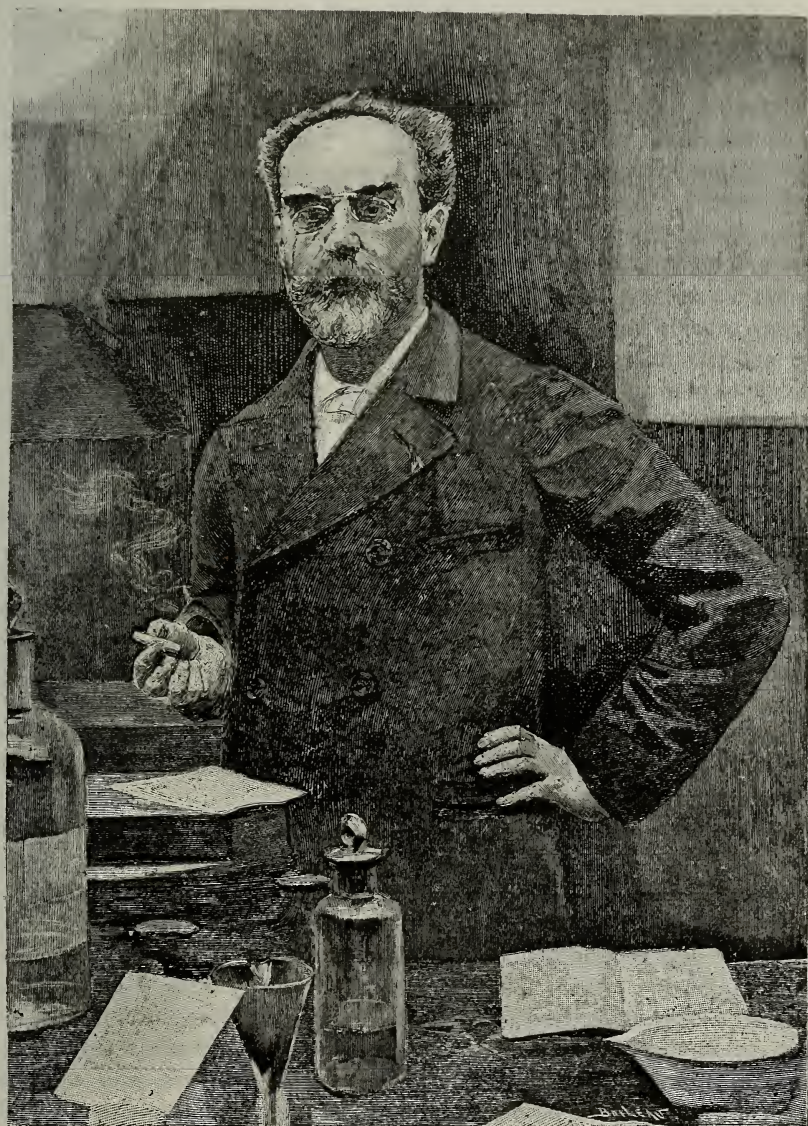
Briefly stated, M. Lippmann was born at Hollerich, in Luxembourg, of French parents, in 1845, entered the Normal School in 1867; was named Professor at the Sorbonne in 1884, Member of the Institute in 1886, and Officer of the Legion of Honor in 1894. From the commencement of his studies his brilliant originality was evident, as also his faithful and careful research. On leaving the school he was sent on a mission to visit the German universities, whence he brought back, besides an immense amount of information, the degree of Doctor of Philosophy at Heidelberg. His discoveries gained him high honor at the Sorbonne, where Jamin admitted him into his laboratory, where he pursued his studies in the wonderful domain of electricity so successfully as to gain him in 1881 the degree of Chevalier of the Legion of Honor.

His appointment to the position formerly held by Jamin changed the course of his thoughts, and the investigations then entered upon brought about his discovery of photography in colors.

These investigations were extensive, both in acoustics and optics, and the inferential method by which he worked is even more remarkable for the simplicity of its conception than for the beauty of its results. It is an instance, and a remarkable one, of the usefulness of purely scientific work. He had no previous experience in photography. That had to be studied, and it was some three years before he saw the realization of his hopes. M. Berget declares that this success, while it gratified, did not surprise, the great scientist, whose judgment seemed to be a kind of divination that he could, by his remarkable mental prescience, foresee the results of his labors.

M. Lippmann speaks German and English fluently, and is as well acquainted with the literature of England and Germany as with that of France. He is

himself an easy, concise, elegant writer, and his marriage in 1888 to Mlle. Cherbuliez, daughter of the academician, brought him into the midst of a congenial literary circle. He is a thoroughly genial, kind-hearted man, exceedingly modest and retiring, and finds his keenest enjoyment in his search for great scientific truths. No one ever questions him in vain; he is always ready to an-



GABRIEL LIPPMANN.
(Portrait from *Revue Illustrée*.)

swer earnest seekers for information, and is, besides, thoroughly disinterested. He might have made a great fortune, it is said, through his discovery of photography in colors, but prefers to leave the field open to all workers, and not confine the benefits to one man.

His existence is a constant labor; he is the first one in his laboratory and the

last to leave it. Even on Sundays, when the quiet of the Sorbonne is usually unbroken, M. Lippmann is often the only worker within its walls. It is to be hoped—nay, expected—that such a faithful seeker after knowledge will give the world many other benefits from his labors.

CATHARINE WEED WARD.

IMITATION CERAMIC PHOTOGRAPHS.

[From the British Journal of Photography.]

WHEN one looks back at some of the processes of photography and modifications thereof that have at various times been introduced, one cannot be but surprised that many of them have not been turned to a practical account in every-day work. Sometimes, however, some of these old inventions and appliances are reinvented, patented, and exploited as being original. The particular process we have in our mind is one that in years past we have directed attention to, and it is one that was, we know, successfully worked, commercially, on the continent; but full advantage was not taken of it, except for what might be termed advertising purposes. It is, however, quite as well adapted for photographs of every description, and at the time referred to we produced some very excellent results in portraiture that were mistaken for veritable burnt-in ceramic pictures, and for actual permanence they are in no way inferior. If they are properly produced, the surface is quite as hard as some of the soft glazes used for enamels. Furthermore, they are not liable to exfoliate, as some of the soft enamels are liable to do.

Some ten or a dozen years ago, the process formed the subject of a patent in this country; but, if we remember rightly, it was not carried beyond the preliminary stage. Anyhow, there are not any patent restrictions with regard to the process at the present time. In a word, the picture is one on porcelain, or other vitreous ware, and japanned; that is, its surface when finished is as hard and durable as a good old-fashioned japanned tea tray, for example. As the images are produced by the carbon process, it goes without saying that they may be in any color that may be desired.

The process is carried out in the following manner: A carbon print is produced, preferably by the single transfer method on the ware, which may be a porcelain plaque, a glass or metal plate, indeed upon any impervious material upon which a carbon print can be developed, and which will also withstand a considerable degree of heat. So far as the production of the carbon image is concerned, there is nothing different from the ordinary method of procedure; it is after this part of the work is completed that the novel portion of the process comes in. We will here digress for a moment to explain, tersely, what is known as japanning. This consists of coating the surface with a suitable varnish, in repeated thin layers, and then subjecting it for a time to a tolerably high temperature. The varnishes generally used for this class of work are amber and copal. The former yields, perhaps, the harder film; but the latter, if good, is little, if anything, inferior, while it is whiter, a consideration for our present purpose. It may be mentioned that it is not all amber or copal varnishes that are suitable for japanning. Those that must be used are what are specially prepared for "stoving." The varnish we have used very successfully was purchased under the name of "white dial varnish." It gave a colorless film, and was exceedingly hard and bright when the picture was finished.

Mention was just made as to the varnish being applied in successive thin coatings. They are put on with a camel's-hair brush, but a fresh coating must not be applied until the previous one is thoroughly dry and hard, this condition being hastened by a moderate heat. If any brush marks are apparent, they may be disregarded, as they will disappear in the final stoving or in the after-operation of polishing. After the work has been stoved, that is, kept at a temperature of from 150 to 200 degrees Fahr. for some hours, it is allowed to cool. The surface is then polished, first with pumice powder, then with tripoli and oil, and finally with putty powder, as lenses are polished. It will now be seen that the surface will possess an exceedingly high polish, and, if amber be the varnish used, it will be as hard and durable as the amber used for the mouthpieces of cigar-holders and the like.

Here is the way we proceeded. The carbon print was developed on an opal plaque and allowed to dry. A thin coating of the white dial varnish was then laid on with a flat camel's-hair brush. It may be mentioned that the varnish used for this coating was thinned with about an equal bulk of turpentine. Successive coatings were then applied, and finally the picture was stoved and polished as just described. The source of heat for the stoving in our experiments was the oven of the domestic kitchener, and it answered the purpose well, as the heat was perfectly under control.

In making pictures by this method it may be advisable to employ a tissue that contains a maximum of pigment and a minimum of gelatine, so that the film bearing the image is of a somewhat porous nature. The first coating of the varnish will then permeate it, and so bind it more firmly to the ceramic base. It is needless to mention that the pictures can be colored, if desired, before they are japanned.



ELECTRIC LIGHT IN PHOTOGRAPHIC STUDIOS.

THE method described in previous issues of the BULLETIN for using the electric light has recently been improved upon. The chamber has been entirely discarded and two reflecting screens used. A screen 12 feet wide and 8 feet high is made and covered with white oilcloth over which pink paper is pasted. Hinged to the top of this screen is another screen projecting outwards at any desired angle and serving for a top light. The electric apparatus faces this combination screen and an excellent skylight is thus reproduced. The other screen is the usual double reflecting screen used in many photographic studios. By doing away with the chamber much inconvenience is spared to the sitter. The lamp, of course, gives off a certain amount of heat and with a closed-in chamber, with no provision for ventilation, the subject was liable to become considerably depressed. The new arrangement reproduces almost exactly the ordinary operating-room, the only difference being that the source of light is inside instead of outside.

It is interesting to note in this connection that a somewhat similar arrangement, using the light of burning magnesium, was described in the BULLETIN of April, 1893. C. E. Elliott, of London, is therein reported as using magnesium ribbon, burned so as to give a minimum of smoke, the light being reflected upon the sitter, who is screened from the direct rays.

THE PHOTOGRAPHERS' ASSOCIATION OF OHIO.

THE Fourth Annual Convention of the Photographers' Association of Ohio has passed into history, and the officers can justly be proud, for it was the largest convention in point of numbers as well as displays of pictures ever held in this or any other State in the Union.

The session was opened by President R. P. Bellsmith, who introduced acting Mayor Barker, who made a very able address of welcome. He referred to the daguerreotype, the progress since then, and assured the photographers a hearty welcome to the City of Columbus, after which the President delivered the following address :

PRESIDENT'S ADDRESS.

"Ladies and Gentlemen,—In opening the Fourth Annual Convention of the Photographers' Association of Ohio, I desire to congratulate you as an association upon being the largest in point of membership, the best equipped, and most influential of any State Photographic Association. Indeed, you are beginning to rival in the matter of fine exhibits and practical demonstrations in our instructive sessions the National Association itself.

"Stimulated by your success, other States are organizing into similar associations, and are seeking information from your executive, being desirous of patterning after your organization. That the Photographers' Association of Ohio has been beneficial in fostering a feeling of social intercourse among its members, and establishing fraternal relations and good fellowship, is true beyond question.

"One evidence of the good fellowship and better understanding between photographers in this State is the fact that at the present time there is less complaint of the working of unprofessional schemes and that senseless cutting of prices that heretofore was such a nightmare to the average photographer a year or two since. The fact that these meetings once a year have been the means of so much good has suggested to me the advisability of organizing local societies. In large cities it is easy enough, but by a number of smaller towns banding together and forming a district, I think you would find this practical, the purpose being to promote a friendly spirit among its members, to exchange ideas, and adjust any difficulties that may arise. I think it would be well for this Convention in some way to encourage the formation of these local societies.

"This is a convention of photographers, and we want every member to take an active part in our meetings. I would especially urge your prompt attendance at all sessions of this Convention. We are here to learn ; let us give heed. It is specially desired that there be a perfect freedom of discussion, and that the 'question box' be used freely.

"In closing I would say that the Executive Committee have prepared a rare good programme, both instructive and social, and you are all cordially invited to enjoy the same."

A vote of thanks was tendered the City Council for the use of the City Hall and Council Chamber.

COMMUNICATIONS.

A communication was received and read from Dr. J. H. Smith & Co., Zurich, Switzerland, requesting any American photographer who might travel in Switzer-

land to call and try some of their specialties in photographic manufacture. Another one from the "Société Photographique de Courtrai," Belgium, offering the use of their darkrooms, laboratories, etc., to any of our members traveling in their country. On motion, the Secretary was instructed to communicate with the society, thanking them for their cordial greetings. Also one from John Carbutt, the veteran dry-plate maker, in which he calls attention to a new developer.

The President appointed as Nominating Committee Messrs. Appleton, Schneider, Trost.

Next, the appointment of judges. The President then appointed Hollinger, of Dayton; Edmondson, of Cleveland, and Callender, of Springfield. The Convention then nominated Benjamin, of Cincinnati, and Dabbs, of Pittsburgh. These five names were placed in a basket, and Mrs. Brenner drew out three, who were to be the judges. The lucky ones were Hollinger, Callender and Edmondson.

On motion by Mr. Rombach, the judges were instructed to judge the special prizes also.

It was suggested that a box be placed in a convenient place, to have the public vote on the most popular picture.

Adjourned.

3 P. M.—A communication from ex-President Ford Lewis, informing the Convention of the loss of his gallery by fire. The Secretary was instructed to forward a letter of condolence to Brother Lewis.

Mr. Rombach gave a very interesting talk on the copyright law, saying that most attorneys were unfamiliar with the law. The only requirement necessary was to enclose \$1, two slips and two pictures, and print on "Copyright by (blank)," and forward to Librarian at Washington, D. C. After this interesting talk, the Convention adjourned.

Tuesday evening, the American Aristo Company highly entertained the members and friends to a concert, lantern slide exhibition and an exhibition of living pictures. The slides were the same shown at the National Convention, and were ably criticised by Hetherington, Bassett, Schneider, Bowersox, Appleton and Sperry. Then followed a concert under the direction of Mr. Hetherington, who also delighted the audience with a whistling solo. The entertainment was closed with the "Living Pictures." Mr. Kimball was shown as "Douglass, the \$3 Shoe Man." Then came the "Gleaner," the "Gypsy Girl" and the "Big Four." Messrs. Bellsmith, Wood, Hoefle and Pattison represented the quartette. Their aggregate weight was 1,046 pounds. "Tom Pat" represented the schoolboy; bare-footed, white locks hanging to his shoulders, and a bundle of books, and slate hanging over his shoulder, completed the make-up. Every one present voted the entertainment a grand success.

WEDNESDAY, 11 A. M.

Announcement that tickets for the banquet could be had at the Treasurer's desk.

The Committee on Nomination reported: For President, L. C. Overpeck; First Vice-President, Jacob Becker; Second Vice-President, George Sperry; Secretary, G. H. Barnum; Treasurer, A. L. Bowersox.

The Convention then proceeded to select a meeting place for next year. The cities Cincinnati, Toledo and Columbus were placed in nomination. Upon

ballot being counted, it was decided by a large majority to hold the next convention at Columbus again.

Immediately after the selection of place, the President ordered the election of officers. Nominations being made, the names of Van Loo and Bowersox were added to that of Overpeck. Mr. Overpeck received 12 votes, Van Loo, 13, and Bowersox, 49. Mr. Bowersox's election was then made unanimous. Mr. Bowersox made a nice little speech, thanking the Convention for their confidence in placing him at the head of the ticket. He hoped the day would come when every photographer in Ohio would see the need of belonging to and encouraging conventions.

Mr. Pfeifer was then elected First Vice-President, Mr. Becker having his name withdrawn. Second Vice-President was then voted on. The nominees were Sperry and Van Loo. Van Loo captured second vice-presidency by a majority of eighteen votes. Mr. Barnum, having no opposition, was elected unanimously to serve as Secretary.

Mr. Brenner and D. H. Baker were the nominees for Treasurer. Mr. Brenner was elected to serve in that capacity, after which the Convention adjourned until the following day.

Thursday.—Owing to the large amount of work the Secretary was not able to report the prize winners until the afternoon session; therefore no session was held in the forenoon.

3 P. M.—The President called the Convention to order for the last time.

Communications from Mr. and Mrs. Clark, of the St. Louis and Canadian photographers, were read expressing regret at not being able to be in attendance to share the pleasures of the Convention. Mr. George Sperry then addressed the Convention on the subject of "Handling Children and Posing in General." He said "children" are the only natural subjects we have, so it is very essential to get acquainted with the child first, to make it feel natural, in order to get a natural expression and position. "Do not force a position, but suggest it. Do not pose a subject in a position because some one else has made that pose, but study your subject, and if you fail, it only sharpens your wits for the next attempt." Mr. S. ended his remarks by saying, "do not try to make every one smile. A round or oval face looks best serious. Photographers are successful in proportion only as they are successful in handling the babies."

Mr. Bassett, on "Handling Accessories," said the tendency was to use too much accessory. He suggested that the subject be posed, then add as few accessories as possible.

Mr. Appleton was requested by the President to give a short talk on "Carbon Printing." Mr. Appleton said: "There are some things in this world that are hard to tell. I have been trying hard for some time to get away from the conventional way of making photographs. I have tried all kinds of papers and plates, and still I groped in the dark. I found it was necessary to use a degree of artistic intelligence which can be gleaned from the proper source. I studied background effects, and found that the best efforts were often spoiled by the use of inappropriate backgrounds, etc." Mr. Appleton closed by saying there were three essentials: 1st, harmony; 2d, breadth; 3d, relief. The Convention was not enlightened on carbon printing, as the gentleman wandered from the subject and did not return.

A new idea was suggested and a committee appointed to work in con-

junction with the Executive Committee. The plan suggested is on the principle of the Paris Salon. The Committee consisted of three members, Appleton, Sperry and Schneider.

The Convention was then addressed by M. A. Seed on "Non-Halation Plates." The subject was ably handled and proved very interesting and instructive. The speaker showed that he was familiar with his subject.

Mr. G. Cramer then spoke on "Isochromatic Plates." "Papa" handled his subject to the delight of the audience. These gentlemen are always welcome at the Ohio conventions.

On motion, a committee of two was appointed to draft suitable resolutions on the death of Mr. Gentile, and that a copy be sent to his widow. Mr. Hume and Mr. Hollinger constituted the Committee.

A vote of thanks was tendered our retiring officers. The President was presented with a gold-headed cane by the boys, Mr. Hollinger acting as presenter. Mr. Bassett and Mr. Hetherington received presents from the boys for their devotion to the success of the Ohio Convention. They responded feebly and with emotion, as they were overcome by the surprise the boys gave them.

Mr. Rombach gave a short talk on "Commercial Photography." He showed some excellent work, showing his knowledge of the subject he presented. The Convention as a whole was a grand and glorious success. Every one went home feeling delighted, and promised to return next year. It would require a Methodist preacher to convince some photographers that it would be of benefit to them to become a member of the Photographers' Association of Ohio.

The membership increased 50 per cent. over last year, and the newly elected officers will try and increase the attendance next year, by bringing a lot of good things, so no photographer can afford to remain absent. After a few remarks by the newly elected President, Mr. Bowersox, the Convention adjourned.

The Cramer special prize, a beautiful statuette, was awarded to J. M. Appleton. This display was entered in the Seed prize, but was afterwards changed to compete in the Seed and Cramer prize.

The American "Aristo" special prize was awarded as follows:

Fifty dollars in gold, R. P. Bellsmith; \$20 in gold, Rombach & Groem; \$15 in gold, A. L. Bowersox; \$10 in gold, Leroy Hume; \$5 in gold, George Sperry.

The Ilotype Company offered \$100 in gold, which was captured by E. B. Core.

The Standard Dry Plate Company's prize went to Van Loo & Trost.

The M. A. Seed Dry Plate Company's prize was awarded to J. M. Appleton.

The Eastman Kodak Company's \$50 worth of Solio paper was awarded to Mr. Minns.

Carl Ernst & Co.'s prize went to Appleton.

The Hetherington Scenic Studio prize was captured by Bellsmith and Bowersox, both securing 30 points.

CONVENTION AWARDS.

Class A.—1st prize, E. B. Core; 2d, George Sperry; 3d, Mulligan Bros.

Class B.—1st prize, H. G. Barnum; 2d, E. B. Core; 3d, George Schmidt.

Class C.—1st prize, E. B. Core; 2d, Roy Hume; 3d, George Sperry.

Class D.—1st prize, J. H. Burkholder; 2d, Brenner; 3d, William M. Gatch.

Class E.—1st prize, Mowery ; 2d, Minns.

Class F.—1st prize, Rombach & Groem ; 2d, L. A. Dozer.

Class G.—1st prize, Rombach & Groem ; 2d, L. A. Dozer ; 3d, William M. Gatch.

Class H.—1st prize, Brenner ; 2d, Rombach & Groem ; 3d, William M. Gatch.

THE BANQUET.

This was the grandest success of all previous attempts, and the credit is due the First and Second Vice-Presidents, Overpeck and Baker. They arranged all details. President Bellsmith presided, with President Schneider, of the National Association, on his left. Ex-President Appleton and two hundred and twenty other knights of the camera graced the festive board by their presence with their wives and sweethearts.

Those from abroad were Mr. Dabbs and wife, of Pittsburgh ; G. Cramer, and wife and sons, from St. Louis ; M. A. Seed, St. Louis.

This occasion will long be remembered.

The stock dealers were at the Columbus Convention in full force.

On entering the main hall the first object of interest that caught the eye of the visitor was the tastefully arranged exhibit of the Cramer Dry Plate Works, which occupied both sides of a screen 35 feet in length. The exhibit consisted of the pictures sent to St. Louis for competition in the Cramer prize contest.

On the side facing the door were twelve 25 x 30 flash lights, made by Jones and Lotz, of San Francisco, and a collection of choice views of Jackson and Denver ; both of these exhibits were made on Cramer isochromatic plates. Hanging just above these were a series of twelve unique pictures from Baker's Art Gallery, Columbus, each figure posed with a letter of the alphabet, and arranged to read "Cramer Plates." On the opposite side of the screen was a marvelous exhibit of photography in all its branches, and it would seem that one could find pictures representing almost every eminent photographer of the United States.

The popularity of the Cramer plates in Ohio was clearly shown by the number of exhibits by prominent men of that State, such as Mr. Bellsmith, of Cincinnati, the President of the Photographers' Association of Ohio ; Mr. Bowersox, the Secretary ; Landy and Core, of Cincinnati ; Pfeifer & Becker, and Luehrs, of Cleveland ; Lewis, Butler and Sperry, of Toledo ; Barnum, of Springfield ; Appleton, of Dayton ; Brenner, of Bucyrus ; Beem, of Greenville ; Hume, Van De Grift, of Lima ; Mowery, of Ashland ; Ogier, of Elyria.

Among Columbus photographers exhibiting here were noticed fine displays from Pfeifer and Mulligan Bros. It will be impossible from memory to recall the names of all the prominent photographers represented here, but we have very pleasant recollections of the exhibits made by S. L. Stein, D. R. Coover, W. Root and Morrison, Chicago ; Dana, New York ; MacDonald, Albany, N. Y. ; Arthur and Philbric, Detroit ; Guerin, Strauss, Rösch, of St. Louis ; Uhlman, of St. Joseph ; Steckel, of Los Angeles ; Rösch, White Plains, N. Y. ; Cornell & Saunders, Rochester.

Mr. Cramer, accompanied by his genial wife and family, were in attendance, and their popularity was made manifest by the warm reception accorded them. The company was also represented by George T. Bassett and J. J. Sheets.

The Walpole Dye and Chemical Company were represented by Mr. DuPee, who showed the merits of their various chemicals.

E. & H. Anthony & Co. secured space for a large display, consisting of backgrounds, accessories and the electric light machine. This was presided over by Mr. T. W. Pattison, whose assistance in making the Convention a success was acknowledged by all present.

The Hammer Dry Plate Company, of St. Louis, had a large and magnificent display of work on their plates by some of Ohio's leading photographers. This, no doubt, was the most varied display, giving an opportunity to see the printing qualities on all papers. The large 4-foot Hammer and the little Hammers were the talk of the Convention.

The entire stage was occupied by the American Aristotype Company. It was undoubtedly the finest decorated and tastefully arranged display ever gotten up by this company, and helped to beautify the Convention hall. Mr. Hetherington was ably assisted by nine of their demonstrators. Mr. Charles Abbott's smiling countenance was there to lend grace to their successful efforts. In their display were prints from every prominent gallery in the country, fully demonstrating that nine-tenths of the most prominent galleries are using this product. It was a difficult thing to tear photographers away from the aristo-platino paper.

Sweet, Wallach & Co. were represented by Charles R. Stevens and genial Jack Hetherington. They reported a good business.

The Bonte Frame Company, of Cincinnati, with its usual fine line of oval and and square frames, in charge of Mr. H. S. Perkins, was, as it always is, well looked after, and, judging from the comments of the trade, was justly appreciated. Mr. Rosenthal, Jr., was Mr. Perkins' able assistant.

The M. A. Seed Dry Plate Company were ably represented by Mr. Seed and Mr. Cassidy. Among the photographers' work displayed were Falk, Steffens, Appleton and others. The entire arrangement of this display was most artistic.

The A. M. Collins Manufacturing Company, of Philadelphia, made a very tasty and elaborate display of their extensive line of photographic card mounts. This old and reliable house is always in the lead in their line.

L. M. Prince & Brother were represented with a fine line of goods, accessories, and a large display of lenses.

The Photogenic Paper Company, of Albany, N. Y., made a fine display of their new paper.

The Toledo Moulding Company made their first exhibit at conventions, and, judging from the tasteful display and the constant booking of orders by Mr. Haviland, their representative, they may feel highly gratified at the new acquaintances made at Columbus.

As at Louis, the Anthony electric light and the Williams flash machine were the centers of attraction. Artificial lighting is here to stay.

Kimball & Mathews had the largest crowd in the hall. They manipulated the punch bowl, and it was a grand success. Their elegant souvenir, a solid silver match-box, made a handsome present. Simpkinson & Miller showed Hetherington grounds and everything a photographer could wish.

The handsome accessory and background donated to the Photographers' Association of Ohio was conspicuously displayed with a large card, giving L. W. Seavey, of New York, credit for the elegant present.

DEVELOPING GELATINO-CHLORIDE PAPERS.

PRINTS are exposed so as to render the image slightly visible, and are then placed in a bromizing solution, potassium bromide, 1 ounce ; water, 10 ounces ; for about fifteen minutes. They are then thoroughly washed and developed in the following solutions :

SOLUTION I.

Hydroquinone	$\frac{1}{2}$ ounce.
Sulphurous acid	$\frac{1}{4}$ "
Sodium sulphite	$\frac{1}{4}$ "
Potassium bromide.....	60 grains.
Water to make	25 ounces.

SOLUTION II.

Caustic soda	$\frac{1}{4}$ ounce.
Sodium sulphite	$\frac{1}{2}$ "
Water to make	25 ounces.

SOLUTION III.

Ammonium bromide.....	1 ounce.
Ammonium carbonate.....	1 "
Water to make	25 ounces.

Take equal parts of each.

Development should be stopped when the details in the high lights begin to show, as the image rather gains than loses subsequently. The prints are then thoroughly washed, to get rid of all developer, and may then be toned in the usual toning baths. The prints, when they leave the developer, are of a brick-red color, and tone readily.—S. HERBERT FRY, at the North Middlesex Photographic Society.

[From the *British Journal of Photography*.]

ON THE DEVELOPMENT OF UNKNOWN EXPOSURES.

WITHIN recent years a very large number of ladies and gentlemen, who merely take to photography as a pleasurable pastime, have relinquished the idea of developing their own exposures, preferring to send their plates for this purpose to a dealer or professional, the result being that during the summer and autumn months many professionals find themselves face to face with large batches of plates for the purpose of development, the particulars of which, in so far as the class of subject exposed upon, or any other equally important factor in the operation of development, is entirely unknown to them, for the sum total of information communicated is generally, "There are so many plates here I want developed, some of them are time and some of them shutter exposures, but they are all mixed up unfortunately"; and so the poor operator is left in total ignorance of much that is essentially necessary to know, with the view of being able to overcome the work with anything like an even moderate degree of satisfaction and the possibility of obtaining satisfactory results.

Others, again, with a fastidious turn of mind go to the opposite extreme, and are seldom satisfied with any results, no matter how much trouble and pains an operator may have expended upon the development, for it is no uncommon case to meet with those who consider every operator ought to be able to develop all plates in such a manner as to retain some beautiful sky effect at the same time as to bring out a most impossible amount of detail in cases of hopeless under-exposure.

Is it any wonder, therefore, that many professionals have come to the determination to decline work of this description, which at all times must carry with it much trouble and unpleasantness?

With the dealer, however, the case is somewhat different, and the development of amateurs' negatives has come to be quite a large branch of their trade, for there is the after-printing of such negatives, which invariably follows anything good enough. It is curious, however, to find some dealers actually saying that they do this sort of work merely to oblige their customers, for it is well known that at all times it is a most unsatisfactory job. Photography, however, as a pastime, must be made comfortable to a very large class who can afford to pay for it, and hence the now very common practice of sending, not only their negatives to be developed, but almost everything else connected with the work, even to the filling of the dark cells, and I shall not be surprised to find before long that club rooms and premises will be started, where, under safe lock and key, a lady or gentleman can store away their entire outfits under the care of a competent keeper, something after the style of the left-luggage office arrangement, with everything to be ready when wanted.

Is it any wonder, therefore, that, after a hard day's work at other branches of their business, a dealer or professional is not in the very best frame of mind to tackle the development of a large batch of plates, the particulars of which are entirely unknown to him, with the almost certain result that a considerable amount of carelessness is almost sure to attend the operation? Failures, of course, there are innumerable, perhaps far more failures than successes; but then, they are all charged for at so much per dozen, and the blame is often, if, indeed, not always, thrown back upon the lady or gentleman themselves, who, as a rule, put it down to their own ignorance; but, if they even get a few passable results, they are quite well pleased. And so the game goes on, being good for the plate-maker and dealer, and affording a spice of pleasure to the every-day life of the novice, who can well afford to pay for it, and who does not expect to turn out work quite equal to high-class amateur or professional productions.

I have said that in many cases the fault does not lie entirely with the lady or gentleman who exposes the plates, and that, as a rule, a certain amount of excusable carelessness is almost sure to attend the operation on the part of the operator who develops them, for how many dealers have even darkroom accommodation sufficiently large to properly undertake the development of a large batch of plates, say, even half a gross of the modest half-plate dimensions? And at this season of the year such is by no means an uncommon quantity to have gathered together from different sources for development, and, of course, very many of these are wanted in a hurry, so they must be all rushed through there and then, somehow.

With the professional having a large and well-appointed developing-room, the case is quite different. A quarter or half a gross of half-plates are developed in batches of from six to a dozen at a time of an evening, after the push of business is over for the day, without almost a single failure, and everything goes like clockwork, because the developer is made to suit the exposures, and the exposures are carefully selected in similar cases. And, further, special accommodation in the way of developing sinks and dishes is at hand to cope with such large quantities. But how many dealers possess developing-rooms of

this description? As a rule, it is some dark cupboard, merely rigged up for the purpose of changing plates only, but which eventually has to do duty as a developing-room, for which purpose it is totally unfit when large quantities of plates have to be dealt with. Is it any wonder, therefore, that failures are more abundant than successes, when such is made to do duty for a well-appointed developing-room; for what facilities can an operator have in such dens to cope with the difficulties he is sure to meet with?

How best to contend with this new feature in amateur photography becomes a question of no small importance, and is one that professionals and dealers alike ought not to ignore, for there is money in the work, and the more satisfactorily it is performed, the more profits will accrue to the poor professional in these dull times. While, as to the dealer, there can be no doubt that the turning out of the greatest possible percentage of good results will most certainly go a long way towards the inducement on their customer's part to continue the practice of this most delightful hobby. While, on the other hand, failure after failure can only tend to one result, viz., the sickening of their customers and a discontinuance of the practice of photography.

Among the first essentials necessary to success is a large and well-ventilated darkroom. It must be a room in every sense of the word. It is no use trying to turn out large quantities of good negatives from a dark box or cupboard, where the operator is cribbed and confined to a ridiculous extent. Such may be made to do duty for the purpose of developing one or two quarter plates at the outside; but when it comes to dealing with large quantities, the case is totally different, for special preparation and facilities must be at hand; otherwise an operator has no power to deal with the ever-varying behavior of almost every plate that is being dealt with; for, if, even when dealing with plates of which a reasonable amount of information is known, the development becomes a matter of no little trouble, how much more so when the operator is in total ignorance of everything concerned? And these unknown factors are not a few. First, there is the plate used. Sometimes, indeed, an operator may from his experience be able to make a fair guess at the particular brand that comes to hand; but it is only a guess at best. But what about the rapidity? and nowadays, in all conscience, the makers are making them fast enough.

Then, what about the class of subject each plate has been exposed upon, for there are wide differences between subjects, such as groups with ladies clad in light summer costumes, and dark landscapes with overhanging cliffs; for the amount of pyro suitable in the latter case would hopelessly spoil a subject in which delicate draperies have to be considered.

But it is needless to enumerate the ever-varying class of plates and subjects; any intelligent photographer must know that it is by no means a difficult thing to spoil a negative in development by the use of too much or too little pyro, or whatever other developer is used.

Then there is the bother of under or over-exposure to grapple with, this alone necessitating a keen perception and the utmost rapidity of action to counteract.

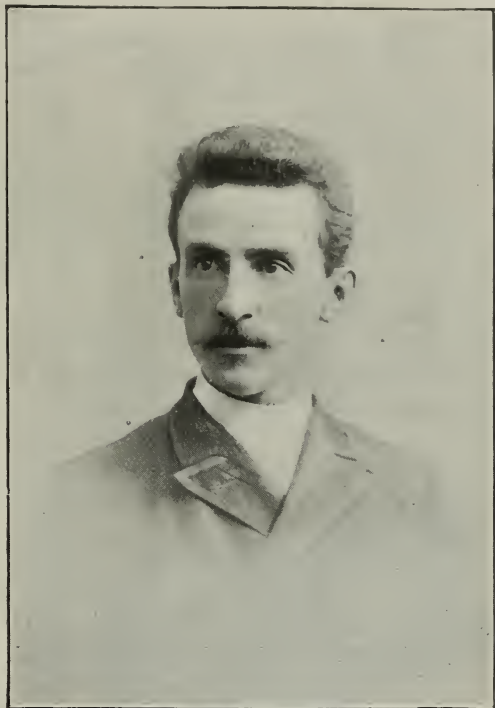
Such are among a few of the many difficulties, and there are countless others that present themselves in unknown exposures. Truly, when dealing with such, an operator's lot is not a happy one, and it is no wonder that after a hard day's work he looks with dread when having to tackle a batch of them.

T. N. ARMSTRONG.

OUR ILLUSTRATION.

STUDIO WORK BY JACQUES JOEL, NEW YORK.

Our frontispiece is printed from negatives supplied by Jacques Joel, of 302 Lenox avenue, New York City. These negatives are all of a high degree of excellence, and when we say that they represent the regular output of Mr. Joel's gallery we can bestow no higher praise upon that gentleman's care and artistic ability. Like Lane, of Brooklyn, who furnished the illustrations for our July issue, Mr. Joel has risen from the ranks and has had considerable experience in every branch. Starting as an errand boy for R. E. Lewis, of Lewis & Holt of collodion fame, he acquired a thorough knowledge of retouching, and, later, did all the finest retouching for the concern. Being intensely fond of his profession, he rose to the position of assistant operator, then to operator, and finally assumed entire management of the gallery. Four years ago he opened a gallery in his own name, and now has a good paying business. Mr. Joel is a man who believes in keeping right up with the times. His gallery is fitted with the most modern apparatus, and he is an ardent student of photographic literature.



The prints are made on American "Aristo, Jr.," a fine, easy-working collodion paper recently put upon the market by the American Aristotype Company. It may be used with the combined or separate toning and fixing bath, and is entirely unaffected by warm, damp weather, which works such havoc with gelatine-emulsion papers.



A PHOTOGRAPHERS' ASSOCIATION FOR INDIANA.— AN OPEN LETTER.

DEAR SIR :

You are invited to attend a meeting at Indianapolis, in Grand Hotel Parlors, Wednesday, September 19, 1894, at 10 A.M., for the purpose of organizing a State Association of Photographers, the object to be :

The advancement of the art of photography.

The elevation of the art of photography.

The interchange of ideas and methods for a higher and more profitable system of conducting the business, etc., etc.

Photographers who favor a State Association, and will join, will please communicate.

Communications addressed to any of the undersigned will receive a prompt reply.

Trusting to see you there,

We remain truly yours,

ADAM HEINBERGER, New Albany;

E. E. SHORES, Vincennes;

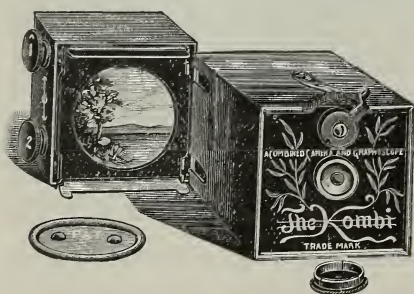
I. DEVOS, Warsaw;

T. B. NICHOLSON, Crawfordsville;

S. L. WILHITE, Bloomington.

THE KOMBI.

SMALL cameras that can easily be placed in the pocket are very popular abroad. The negatives are used for the production of prints, or, better, for lantern-slides and enlargements. With a really efficient instrument marvelous results can be obtained, the operator being enabled to get subjects otherwise inaccessible. Efforts have been made to use cameras concealed in various articles of clothing, but for certain obvious reasons the results have always been unsatisfactory.



The Kombi is a little instrument designed to be held in the hand, and in workmanship, finish, ease of operation and durability leaves nothing to be desired. Twenty-five pictures, each $1\frac{1}{8}$ inches in size, may be taken with one loading of the instrument; square, round or any fancy shape, may be readily obtained by simply changing the matt. Provision is made for both time and instantaneous pictures. The camera

measures but $1\frac{5}{8}$ by 2 inches, and weighs about 4 ounces. It is entirely made of metal and works perfectly. It is sold in a cloth-covered telescopic case for \$3.50. A reloading of film for twenty-five exposures costs 20 cents. By simple removal of a piece at the back and the substitution of a roll of positive pictures for the sensitive film, a graphoscope is obtained. The reloading is simplicity itself, the film being wound on a roller, and the point at which the winding off of one exposure is completed is indicated by three clicks. The Kombi is not a toy, but is capable of yielding excellent negatives for enlarging purposes. The instrument may be obtained from our publishers.



"WHY don't you get a boy to keep your desk in order?" inquired the caller. "It looks awfully littered up." "I keep it this way," said the man at the desk, "to show that I'm always busy." "But why?—Oh, I see! Good day."
—*Chicago Tribune.*

SOCIETIES.

PHOTOGRAPHIC SOCIETY OF JAPAN.—Mr. Kajima Seibei showed a number of bromide prints of various tints; some of which were particularly pleasing. The colors shown were brown, a "red sepia," green, two distinctly different blues, and yellow.

Mr. Kajima gave the following description of his method of producing these prints: The prints are exposed, developed with eikonogen in the usual way, fixed in a neutral bath without the interposition of an acid bath, and thoroughly washed. They are then treated with the following solution:

Nitrate of lead.....	$\frac{1}{2}$ ounce.
Red prussiate of potash.....	$\frac{3}{4}$ "
Water.....	12 ounces.

This converts the image from black into a faint yellow. The prints are again thoroughly washed, and the yellow image is then toned to different colors, with various solutions as follows. For blue:

Perchloride of iron.....	5 drams.
Water.....	6 ounces.

For another blue, called by some a "black blue," the prints are treated with a weak solution of ferrous sulphate. The strength of this solution is not material. For green:

Neutral chromate of potassium.....	$\frac{1}{2}$ ounce.
Water.....	12 ounces.

The prints are washed, and afterwards treated as for the first of the two blues mentioned. For brown, or "red sepia":

Copper chloride.....	5 drams.
Water.....	6 ounces.

The action of this solution is very rapid. For yellow:

Mercuric chloride.....	90 grains.
Iodide of potassium.....	150 "
Water.....	8 ounces.

The action of this solution is very slow, but the prints darken considerably in drying. By continuing the action for a long time, a very pleasing color that might be described as "light brown" results.

Messrs. W. K. Burton and T. Kondo showed the results of the use of orthochromatic plates with a yellow screen for portraiture. The result in the case of people of dark complexion was remarkable. In the case of the orthochromatic plates the necessity for retouching was almost done away with, and a result obtained that could not be got by any amount of retouching in the case of an ordinary plate. The photographs taken on ordinary plates looked like caricatures besides those taken on the orthochromatic plates. Professional photographers had been prevented from using orthochromatic plates for their ordinary work in the studio on account of the difficulty of a color screen, which is quite necessary to get the full advantage of orthochromatism, but this difficulty was overcome by the use of a sheet of ordinary patent plate coated with picrated gelatine fixed in the dark slide in contact with the sensitive film, as described at a previous meeting of the Society.

Anthony's * Photographic * Bulletin.

EDITED BY

Prof. CHAS. F. CHANDLER, Ph.D., LL.D.,
FREDERICK J. HARRISON.

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Readable Articles on Topical Subjects.

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E. & H. T. ANTHONY & CO., 591 Broadway, New York.

BOOKS RECEIVED.

From the Obrig Camera Co. we have received a "Booklet of Good Things." This contains many useful hints and will be found of service to the amateur.

LA PHOTOGRAPHIC EN MONTAGNE.—E. Trutat, président de la section de Pyrénées Central du Club Alpin français, Paris, Gauthier-Villars et fils. Photog-

raphy has to-day become the indispensable auxiliary of every traveler, explorer, tourist and mountain climber. Mountain photography presents special difficulties and demands treatment differing somewhat from ordinary landscape photography. The author's long experience enables him to give good advice. The book can be obtained direct from the publishers, or from E. & H. T. Anthony & Co.

TABLE OF CONTENTS.

	PAGE		PAGE
A PHOTOGRAPHERS' ASSOCIATION FOR INDIANA..	309	ON THE DEVELOPMENT OF UNKNOWN EXPOSURES.	306
BOOKS RECEIVED.....	312	OUR ILLUSTRATION	309
CRACKED NEGATIVES.....	279	PHOTOGRAPHERS' ASSOCIATION OF AMERICA	
DEVELOPING GELATINO-CHLORIDE PRINTS.....	306	DIPLOMA AWARDS.....	290
ELECTRIC LIGHT IN PHOTOGRAPHIC STUDIOS	299	PRINTING.....	280
GABRIEL LIPPMANN, <i>by Catharine Weed Ward</i> ..	296	RETOUCHING LANDSCAPE NEGATIVES.....	289
IMITATION CERAMIC PHOTOGRAPHS.....	298	SCENES IN THE CITY, <i>by J. Reuel Smith</i>	288
ITEMS OF INTEREST.....	282	SOCIETIES	311
JOTTINGS FROM GERMANY	293	THE INFLUENCE OF GELATINE ON THE DOUBLE	
LANTERN SLIDES AND TRANSPARENCIES, <i>by Edw.</i>		DECOMPOSITION OF SALTS, <i>by J. Gaedicke</i>	295
<i>Weinacht</i>	292	THE KOMBI.....	310
LANTERN WORK.....	291	THE PHOTOGRAPHERS' ASSOCIATION OF OHIO ...	300
MAGNESIUM POWDER, <i>by H. Fournier</i>	287	THE USE OF FILMS.....	277



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AS JULIET.

ANTHONY'S Photographic Bulletin.

EDITORS :

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

FREDERICK J. HARRISON.

VOL. XXV.

OCTOBER 1, 1894.

No. 10.

EXPOSURE AND EXPOSURE METERS.

THE beginner who, with his hand camera, has snapped his shutter with impunity during the summer will find his percentage of failures increase as the winter approaches, unless he can be persuaded to believe that an instantaneous exposure must only be made when conditions are most favorable. The camerist of experience finds no little difficulty in correctly estimating the time of exposure, and while it is possible to more or less offset, during or after development, any little discrepancies, there is no doubt but that a correctly exposed plate is more likely to yield a perfect negative than one which, incorrectly exposed, is subjected to some doctoring process. Indeed, to both professional and amateur, the question of exposure is a serious one. The professional will doubtless in the near future adopt the electric light and discard daylight, except for printing, but the amateur will always have to deal with an ever-changing light.

It is practically impossible to make a time exposure with the camera held in the hand ; but all hand cameras nowadays have plate and screw for the tripod, and the experience gained while using this latter will be of considerable use to the individual who rarely sees the ground-glass. Better work will doubtless be done, and a better conception of the powers and limits of the camera obtained. While the professional will rejoice in a constant light and plates of known rapidity, the amateur is not entirely without assistance in this matter of estimating exposures. Within recent years several instruments have been put on the market, having for their object the ascertaining of the correct exposure time. These are known under various names—photometers, actinometers, actinographs and exposure meters—and all have many features which will commend them to the photographer. We are aware that many presumably able photographers have condemned the use of these plate-savers, but these savants have offered nothing in the way of a substitute but experience. Experience will cer-

tainly teach the beginner that he has incorrectly exposed his plate, but, as the light is constantly on the change, it will hardly give him data for his next attempt. Where he has a constant source of light, as in copying or making enlargements or lantern slides by artificial light, experience will doubtless suffice, and a few trials give the key to an absolutely correct exposure. But when, as in every-day, outdoor photography, the conditions are ever changing, even the old-timers can do nothing more than approximate, the presumably able photographers notwithstanding. An instrument which will assist the photographer to obtain a correct idea of the time required, is, in our opinion, a most useful adjunct, and the old photographer, as well as the beginner, may use it as a valuable addition to the measure of experience that he has acquired. We have, in former issues of the *BULLETIN*, alluded to the Ballard actinometer, the actinograph and the Watkins exposure meter. The actinograph consists of three scales in a small wooden box, and the time of day and year, the diaphragm used, speed of plate and general quality of the light are considered. With the Watkins exposure meter, the actinic power of the light, the speed of plate, character of the subject and the diaphragm used are the factors employed in determining the exposure. The latest instrument for this purpose, recently placed on the American market by our publishers, is known as Wynne's infallible exposure meter, and is so very simple and exact that the spoiling of a plate because of error in exposure should hereafter be a rarity. The apparatus is of the shape and size of a small watch, and in calculating the exposure one movement only is necessary. The intensity of the light is determined by the time taken to darken a piece of specially prepared paper to a standard tint. In order to save time when the light is dull two tints are supplied; one, the standard, and the other, a tint reached by the sensitized paper in a time one-fourth that required to reach the standard tint. This is very useful when making interiors. The character of the subject, sensitiveness of the plate used and the diaphragm employed are also considered. The actinometer numbers of the various plates are furnished with each instrument. We have ourselves used it with the greatest success, and have heard nothing but the highest praise from others.

The amateur photographer, armed with such an instrument, may remove one of the causes of failure, and may then bring his experience into play during development. Working with known quantities is an easy matter. Thus the professional, with a studio in which a constant artificial light is always used, is relieved of any danger of incorrect exposure, and can absolutely guarantee that his results will be uniform. The amateur, with the changing light, but with the means of exposing so that the action of the light shall always be of the same degree, really works with a constant light, and insures to himself equally uniform results.

An exposure meter should certainly form part of the beginner's outfit. Exposure without such an instrument is always more or less a matter of guesswork, and the beginner had much better use a meter which will remove one source of failure. It is sometimes urged that photography is becoming too mechanical. This is the argument of those who never made an artistic picture. The photographer should consider it his duty to use every piece of apparatus that will enable him to replace approximations with accurate quantities. The exposure meter is such a piece of apparatus, and as such it may be used with profit by both tyro and expert.

BROMIDE PRINTING.

Why is it that this beautiful and comparatively easy printing process is so much neglected by both amateur and professional? To the latter it should especially appeal, for matt-surface prints are daily becoming more popular, and the use of bromide paper renders him independent of the sun. At the recent Photographers' Association of America Convention a rapid-printing machine attracted considerable attention. A roll of bromide paper is placed in one compartment, and by means of rollers is drawn over the negative, exposure being made by means of a shutter. In this way some two hundred to three hundred prints may be exposed in one hour, and, all having received the same exposure, perfectly uniform prints may be obtained. Indeed, in those studios where artificial light has been adopted exclusively, this would seem to be the ideal method of printing. Bromide paper is now made with both enameled and matt surface, and may be toned, if desired, to resemble ordinary printing-out papers. There has been much talk recently regarding the development of gelatino-chloride prints. This process will not, nor should it, become popular in this country. The results obtained are vastly inferior to those on enameled bromide paper, and the process is a roundabout one with nothing to recommend it.

The amateur, as the winter months approach, will find his opportunities for printing by daylight considerably curtailed, and should welcome a process which will enable him to secure prints from wet or dry negatives in a few minutes. Bromide paper is not a printing-out paper, but requires development. It is extremely sensitive to light, and must receive as much care in handling as a dry plate. The packages must be opened only in ruby light, and the paper, until it is thoroughly fixed, must be protected from daylight. The question will surely arise, which is the coated side of the paper? This may be ascertained by noticing the curl of the paper when a sheet is laid on the table. The paper always curls towards the coated side. When small pieces are being used, the amount of curling may be too small to be perceptible. Pressure between the moistened finger and thumb will indicate the coated side, the gelatine, of course, adhering. A small piece of the paper is placed in position in the printing frame and a trial exposure made by holding the frame at a distance of about 2 feet from an ordinary gas or oil jet. To develop, moisten the paper until it lays limp, and develop as with a lantern slide or transparency, stopping development when all the details are out. Any developer will do, but the ferrous oxalate, hydroquinone or eikonogen will be found preferable. The whole process is very simple, and the results rival the platinum print in beauty, and are certainly permanent under any but the most extraordinary circumstances. Mounted on the platinotype mounts that have recently come into favor, the most exacting could ask for nothing better.

ENAMELED bromide prints, when finished, should be dusted and then flowed with plain collodion, prepared as follows :

Alcohol.....	10 ounces.
Gun cotton.....	120 grains.
Ether.....	10 ounces.
Glycerine	3 drams in 5 drams of water.

This gives them a brilliant appearance and makes them water-proof. Enlargements should be mounted upon stretchers and laid face up to dry, after which they are ready to be finished. To make the application of crayon or pastel easy, the surface should be rubbed with the finest pulverized pumice stone and a pad of cotton flannel.

CARBON PRINTING FOR PROFESSIONAL PHOTOGRAPHERS.

THIS beautiful and permanent process is but little used by American photographers. Large quantities of autotype tissue are consumed by photo-engravers, but the photographer, for some unaccountable reason, fights shy of it. At the exhibition of the New York, Boston and Philadelphia societies the carbon prints exhibited by J. L. Breese always had an admiring audience. At the Brooklyn exhibition Lane's carbon prints were pronounced the gems of the exhibit. Why, then, this neglect on the part of photographers to avail themselves of a process which will yield prints in any color on any material?

The manipulation is not difficult, the apparatus required is simple and inexpensive. The daylight tissue recently introduced by the Autotype Company removes all trouble in sensitizing and drying. E. W. Foxlee, writing in *Autotype Notes*, remarks:

"It has been suggested to me more than once, quite recently, that one reason why carbon printing has not been more experimented with and tried by professional photographers for the better class of work as a means of giving a fillip to business, is that so many special appliances appear necessary, even to make a beginning with. The idea, I have reason to believe, is not altogether uncommon. There might be a ground for it if the complete sets of apparatus one finds in price lists were really necessary to the professional photographer. These sets, I take it, are put up for the convenience of amateurs, who, as a rule, have but limited appliances, and also prefer to purchase their apparatus in sets so as to ensure that they get all that is necessary, rather than professional workers who already possess the appliances to be found in every establishment where silver printing is practiced.

"If this supposed necessity for a special plant has acted as a deterrent to any experimenting with carbon printing, it is to be regretted, because the idea is based on a wrong foundation. I remember a few years ago, Mr. Cowan, at the Photographic Club, demonstrating the production of carbon pictures on opal, and the only things he employed, beyond the exposed tissue and the opal glass, was a squeegee, a hand basin requisitioned from an adjacent bedroom, and a jug of hot and one of cold water. I merely mention this circumstance to illustrate that elaborate appliances are by no means required, my object being to divert attention to the fact that any photographer can try carbon printing on a sufficient scale to prove whether it will answer his purpose to introduce it in his business without incurring any outlay for plant beyond what he already possesses.

"Let us consider the things necessary, *seriatim*. An actinometer of some kind is required for timing the exposure. Several convenient forms are in the market; but a very useful one may be extemporized by taking half a dozen narrow strips of thin white paper, each $\frac{1}{2}$ inch longer than the other. These are then gummed together, one on the other, at one end, and we then have a graduated screen, in steps, which can be numbered in ink from one to six. This, in a quarter-plate printing frame, with a slip of silver paper behind it, makes a capital actinometer for carbon printing. Pressure frame—any sort will do. The backs need not be hinged, but there is no objection to their being so. The next thing necessary in the work is a squeegee—a tool

generally in the possession of every one now that highly glazed pictures are so much in vogue—and some even surface upon which to squeegee the exposed prints into contact with the support. A piece of plate glass is as good as anything. Any kind of photographic dishes, or other vessels, will do for the cold water, the bichromate solution, and for the alum bath. A thermometer most people have. If not, a common bath or dairy thermometer can now be obtained at most chemists for about a shilling. These instruments, though rarely correct, are always accurate enough for our present purpose.

“It is necessary that the tissue, when in the sensitive condition, should be kept dry and protected from the air. An ordinary cylindrical tin case answers well, but it will be a convenience in working if the tissue be kept flat. This can be done by keeping it tightly pressed in a printing frame; it will then be as perfectly protected from the atmosphere as if it were in an air-tight case. I think I have now got to the end of what is actually necessary for working in a small or experimental way, except something for developing the pictures in. It is obvious that any vessel that will hold hot water will serve; but for convenience in working it should not be less than 4 or 5 inches deep, and somewhat larger than the largest picture to be manipulated in it. A stout tin tray is very suitable, and if it be supported on legs, or by any other means, a gas jet or a spirit lamp can be placed beneath, so as to keep the water from cooling. A good size tea-kettle completes the outfit.

“Before concluding, I will say a few words about the tissue. At one time there was a difficulty—unless a special apartment was arranged for the purpose—in sensitizing the tissue and drying it, so that its best working condition was secured. With the tissue as then supplied, if it were dried too rapidly there was the danger of reticulation and other troubles. If it were dried too slowly, there was the almost certainty of insolubility. Indeed, at one time the sensitizing and drying of the tissue used to be considered the bugbear of the carbon process. But during the last few years the Autotype Company have so improved their tissues that these troubles are now practically nil, and absolutely so if the new daylight tissue be used; for that, after sensitizing, can be placed anywhere to dry—indoors or out. If the daylight tissue be used, a few tin or ferrotype plates will be required for drying it upon. If neither should be at hand, glass plates, backed with black varnish, will do quite as well. My advice, however, is for the beginner, in his first few essays, to purchase the tissue ready sensitized.

“In the foregoing my aim has been, as already said, to indicate to all, or any, who may have been deterred from essaying carbon printing on account of imaginary cost for plant, that they already possess all that is actually necessary for trying it—sufficiently, at least, to see if it will prove profitable in their business.”



THE daylight carbon tissue referred to in this and previous issues may now be obtained from our publishers, the extra cost being but 25 cents per band. There is now certainly no reason why both amateur and professional workers should not take up this beautiful process. The necessity for drying in a well-ventilated darkroom is dispensed with, and the tissue may be dried out in the open air with perfect safety.

“THE INTERNATIONAL ANNUAL.”

THE seventh volume of “The International Annual” is now in the press and will be ready on or before December 1st. The first edition of the sixth volume was sold entirely almost as soon as printed, and but few copies of the second edition remain for sale. Perhaps never before has a year book of photography received so much praise, both for reading matter, illustrations and general make-up, as was awarded to this sixth volume. The size had been increased to octavo, and much care and time expended, with the result that the photographic and general press had but one opinion regarding it. “Its get-up is perfect” was the universal verdict, and the public showed their appreciation of the book by buying out the whole edition in two months.

“The International Annual” is made up of thoughtful and practical articles on the theory and practice of photography, written by the best known authorities in every country in the world. These articles are mostly illustrated and the book is a complete record of the progress of photography during recent years. Men of every profession, who have made photography a hobby, will find in it hints and ideas, by the aid of which they may not only do better photographic work, but may apply photography to advantage in their business. The professional photographer will find in its pages much matter of vital interest to him.

In the matter of illustrations volume six of the “Annual” has hitherto been regarded as having reached the high water-mark of excellence. We can, with perfect confidence, predict even greater success for the coming volume. D. R. Coover, of Chicago, the late Vice-President of the Photographers’ Association of America, has made a series of negatives especially for the book, and the frontispiece will be an actual print from one of these negatives. J. Ed. Rösch, of St. Louis, the treasurer of the Photographers’ Association of America, Landy, E. C. Dana, M. B. Parkinson, S. J. Eddy, E. B. Core, Hemperley, Arthur and Philbric, J. G. Nussbaumer, J. A. Brush, C. E. Von Sothen, B. J. Falk, Meacham & Sabine, McCrary & Branson and others of the most prominent photographers in the country, have made special sittings with a view to illustrating the annual. Their efforts have been ably seconded by the leading photo-engravers in the country, and as a volume of posing and landscape studies and specimens of photo-mechanical printing the “Annual” will be hard to equal. “The International Annual” set the pace in illustrations last year and will retain its lead.

Regarding the reading matter, contributions have been received from some one hundred and thirty authorities, among whom we recall Col. Waterhouse, of India; H. Fourtier, E. Forestier, Col. Laussedat, C. Gravier, V. Legros, A. C. Champagne, G. Balagny, of France; Victor Schumann, Valenta, J. Joé, Dr. Rudolph, J. Gaedicke, Lainer and others, of Germany; W. K. Burton, of Japan; H. Crisp, J. H. Harvey, of Australia; S. Aspa, Rev. T. Perkins, J. Traill Taylor, R. A. R. Bennett, J. Boothroyd, F. Davies, E. Beringer, A. D. Guthrie, M. J. Harding, Chapman Jones, R. Child Bayley, Rev. F. C. Lambert, Dr. H. V. Knaggs, C. H. Bothamley, H. Sprunt, W. Sprange, W. J. Spurrier and a host of others of the United Kingdom; and of the United States, Edward L. Wilson, John A. Tennant, F. Dundas Todd, R. E. M. Bain, A. Bogardus, W. I. Scandlin, G. W. Hart, R. M. Fuller, P. C. Duchochois, T. C. Roche, Dr. Hugo Schroeder, J. L. Yatman, H. T. Duffield, C. E. Fairman, Macfarlane Anderson, W. D. Farrington, H. W. Hales, W. J. Hickmott, W.

N. Jennings, Abe Lizzard, C. A. Mackechnie, O. G. Mason, Manley Miles, M. B. Punnett, C. E. Rönne, J. W. Sanborn, A. Skeel, A. Lee Snelling, Max Toch, M. Wolfe, C. E. Von Sothen, C. E. Vredenburg and others whose work in photography is well known to every student.

The publishers have spared no expense in the general make-up of the book, and volume seven of "The International Annual" should be and will be the finest year book ever published.

ITEMS OF INTEREST.

THE following formula for an intensifier is sent to us by Captain F. C. Grugan: No. 1, saturated solution of salt in water; No. 2, saturated solution of mercuric chloride in alcohol. Equal parts of Nos. 1 and 2 = A. Take of A, 1 part; water, 4 parts = X. B = concentrated ammonia, 1 ounce; water, 19 ounces.

Place negative in X until thoroughly bleached, then wash well and place in B. Repeat until sufficiently dense, washing after each immersion. The negative should have been dried before intensifying.

WE would advise our readers who are members of societies to peruse the notice of the Demonstrating Committee of the California Camera Club, published in this issue. It is a fact that our societies, with but two exceptions, have done but little towards the education of their members, and have accomplished practically nothing in the way of research work. Their members meet and adjourn. The programme of the California Camera Club is a good one, and their action might well be imitated.

WE have to thank E. E. Weatherby, of Plymouth, O., for a beautiful posing study which now adorns our office. We are always glad to receive such tokens of appreciation from our friends.

AT a recent meeting of the North Middlesex (Eng.), Society W. E. Debenham demonstrated "Intensification and Reduction." In his introduction he said that it was sometimes assumed that we ought to get what intensity we want in our negatives with the developer in the darkroom, and that no intensified result was so good as if the requisite intensity were obtained direct by development. He, however, dissented from this view, and maintained that in some cases better results could be got by intensifying a thin negative than by taking the same plate to a sufficient density at once. He reviewed the various well-known methods of intensification, pointing out the leading characteristics of each, and proceeded to demonstrate the mercury and Schlippe's salt method, for which he owned to a preference. The first essential is that the negative be thoroughly fixed, and as thoroughly washed, to thoroughly free the plate from silver in those parts where there is no image. Then take some saturated solution of bichloride of mercury and put into it a few crystals of iodide of potassium; this will throw down a precipitate like sealing wax, but the addition of another crystal or two suddenly clears it. This is then poured over the negative, which should have been previously soaked in water, and the intensification proceeds. When enough density has been obtained, it is thoroughly washed, and

flowed with a 5 grains-to-the-ounce solution of Schlippe's salt, which turns the image to a brown color; it is then again washed, dried and printed from. He then proceeded to reduction, by both the chloride of lime and Howard Farmer's methods, reducing the two halves of one negative by the different means, with, as far as could be judged, identical results, the Farmer method, however, giving a much yellower negative. The Howard Farmer formula is so well known that it need not be repeated. The chloride of lime method is as follows: Chloride of lime (the common oil-shop variety), $\frac{1}{2}$ pound in water 80 ounces, shake well and filter; add 10 ounces washing soda, shake well and filter again; flood your plate with the solution and wash when sufficiently reduced.

To produce a black tone on blue print paper, the blue print is placed in water acidulated with nitric acid, and then passed into a bath of carbonate of soda, 5 parts; water, 100 parts. The image turns to an orange color. It is then immersed in a bath composed of water 100 parts, gallic acid 5 parts, and is finally washed in water acidulated with muriatic acid.

COMMENTING on experimental and personal work, Colonel Waterhouse writes: "An instance occurred during the year showing the value of orthochromatic plates for copying maps printed in colors which would be quite impossible by the ordinary process. Copies were quickly required of a map on which the hill features were shown in burnt sienna and the streams in blue. Taken in the camera by the ordinary wet collodion process, the hills were perfectly black and obscured the names, while the streams were not traceable. By using dry plates, orthochromatized, together with a deep yellow glass screen, photographed copies were obtained showing quite clearly and legibly the black outlines and names, the brown hills and the blue streams, and from this the map was afterwards redrawn and photo-zincographed."

THE *Photogram* gives as the chief advantages of artificial light, as compared with daylight: 1st, ability to work at any hour, independent of darkness or fog; 2d, economy, combined with comfort to sitters, through the possibility of using ground floor or basement rooms, without a separate site to allow of skylight; 3d, regularity of results, which leads to economy in time, labor and materials, because the lighting and the exposure (the variable factors of ordinary studio work) are brought under control.

WE are in receipt of *Process Work*, a monthly circular for workers in all photo-mechanical processes, published by Penrose & Co., of 8 Upper Baker street, Clerkenwell, London, England. Any of our readers professionally engaged in photo-mechanical work who would like to receive this monthly budget of useful information should write to us.

WE understand that the Japanese government is inaugurating an exhibition, to be held at Kioto next year, from April 1st to July 31st. We wait with interest to learn what part photography will take in it. Perhaps our friend, W. K. Burton, can enlighten us.

A PATENT specification has just been published in Germany, of which the following is an extract: No. 18,237. September 28, 1893. Making Photographic Films. R. Reissner and G. C. F. Hauser, of Erlangen, Germany. The object of the invention is to so treat the films that they can be neither liquefied by immersing them in warm water after they have been dried, nor can they be caused to do so by drying them in a warm room after they have been wetted. The gelatine is rendered insoluble by the action of formaldehyde (CH_2O) to such a degree that the film may be immersed in water of 122 degrees Fahr., or may be dried in a room, the temperature of which is the same, without any danger of its liquefying. A satisfactory result is obtained if the film is immersed in a solution of 1 per cent. of formaldehyde in water, and it is preferable to treat in this manner the usual films of gelatine containing bromide of silver. The films are afterwards washed carefully, dried, and then treated in the usual manner.

TO MAKE paper practically fireproof, immerse it in the following solution, which is heated to 50 degrees Cent.:

Ammonium sulphate.....	8 parts.
Boric acid.....	3 "
Borax.....	2 "
Water.....	100 "

At a recent session of the Budapest Medical Society, Dr. Joseph Antal announced that he had discovered nitrate of cobalt to be an unfailing antidote in poisoning by cyanide of potassium, the two salts forming an insoluble compound. This has been demonstrated by successful results in forty cases. Dr. Antal also first recommended the use of potassium permanganate in phosphorus poisoning.

IN the list of standard photographic publications, bound in with this issue of the BULLETIN, standard works on practically every department in photography will be found. Two new books deserve special mention, "Wilson's Cyclopædic Photography," to which we have previously alluded, and "The Stereoscope and Stereoscopic Photography," by F. Drouin. This latter book is well illustrated, and is practically the only up-to-date treatise on this interesting branch of photography. We understand that a new work on the half-tone process, and a brochure on hand camera work, will also shortly be issued by our publishers.

A. M. ALLEN, of Pottsville, Pa., has sold out his gallery to J. J. Garvin. Mr. Allen has been a professional photographer for forty-four years, and thinks he has done his share of picture-making. We have not many photographers left who can date back to what Mr. Allen calls the "Good Old Daguerreotype."

WRITING to us in regard to our editorial, "The Use of Films," in the September issue, the Eastman Kodak Company remark that the use of alcohol in the soaking solution, for preventing the curling of the films when dry, "will

surely cause shrinking and a consequent curling." The formula they recommend is :

Water.....32 ounces.
Glycerine..... 1 ounce.

Immerse for five minutes. Remove from the soaking solution and pin each film by the corners on a flat board to dry spontaneously. Any teardrops of the soaking solution should be removed with a bit of blotting-paper or absorbent cotton. When the negative is thoroughly dry, wipe off the back with a soft cloth. The negative must not be rinsed after the soaking solution.

H. P. ROBINSON writes in the *Photographic News*: "In portraiture we have a right to expect much more than has yet been done by photographic means. Occasionally we meet with a portrait of which those who know the subject may say, 'That is the man !' Not only the outward and visible man, but a strong suggestion of the inward and spiritual grace ; not only the form of the features, but a potent hint of the character. It is not necessary to idealize the man into something more than reality by aid of retouching, but the clever artist ought, by successful treatment, to bring out the best points of his sitter before he presses the button. Let it, therefore, be a point in a portrait that, in addition to pictorial effect and good technique, it shall have character. In many portraits, and some of them the most pretentious, the photographer seems to have been afraid the head would attract attention, and calls off the too inquisitive eye by aid of accessories. This is the very false gallop of art."

It is said that less than 3 grains of pyrogallic acid will suffice to kill a dog weighing over 14 pounds.

"RADIANT," in *The British Journal of Photography*, comments on a flash-light stereoscopic print that he has seen, and remarks: "Here, surely, is scope for at-home portraiture, namely, stereoscopic work by means of the magnesium flash-light, by which the most delightful effects could be obtained at comparatively little trouble or expense. This is surely worth taking up, especially by professional workers." Thousands of stereoscopic prints from flash-light negatives are made every week by Strohmeyer & Wyman, of New York, and the bulk of them are shipped to England by Underwood & Underwood. We venture to think that the English professional workers are aware of this.

At a recent meeting of the Photographic Club (London, England) the question of the relative permanency of gelatino-chloride and collodio-chloride emulsion papers was brought up. The chairman (E. W. Foxlee) said that time had shown that collodio-chloride was the most stable of all the silver methods.

THE illustrated article on "Timing Shutters," by James E. Boyd and Thomas E. French, of the Ohio State University, that will appear in the seventh volume of "The International Annual" will be appreciated by all photographers.

ALL contributions to the November issue, society reports, new advertisements and matter connected therewith, should reach us not later than October 23d.

AN INTERESTING SUBJECT.

J. A. BRUSH, of Minneapolis, sends us an 8 x 10 print made from seven bust pictures of a charming little subject. Our half-tone reproduction hardly does the print justice. We would suggest that photographers might go in for this



sort of work to a greater extent, especially when children are the subjects. Some half dozen or so plates may be exposed at comparatively little cost, and in nine cases out of ten an order would ensue.

Our picture shows extremely clever treatment of a very pretty subject, and we would thank Mr. Brush for the permission to reproduce the print.

BOTH the amateur and professional photographer will be delighted with Aristo Platino paper. It gives the effect of carbon or platinum print, and is very easily manipulated.

THE "ELECTROGRAPH."

THE days of the skylight are numbered, and with it passes away the climbing of stairs and many of the disagreeable objections and traditions of olden times. The great "reformation" will be accomplished by the electric light. In fact, in the language of the troubled Frenchman, "*c'est un fait accompli.*" I have been the most antagonistic of all as to the final victory of electric light, and it is a rash man who will put himself on record as favoring the electric light in preference to daylight; but in my thirty-eight years as a photographer I never yet made in one day thirty negatives so beautifully lighted, so uniform in exposure, and possessing so many good qualities, as those of Miss Florence Rockwell, whose "electrographs" illustrate this month's BULLETIN. The average exposure was about a second and a half, as far as it was possible for Mr. Hillman and myself to determine, or about as quick as a bulb could be pressed and closed with care. Every picture was fully timed, and I see nothing that would indicate to the layman, amateur, or expert photographer that they were not made under a soft ground-glass skylight in daytime and under the most favorable circumstances. The tremendous expense of building skylights, and the fact that they must be constructed with a certain relation to the points of the compass, has proved a serious handicap to the photographic profession. If I should start business anew to-day, I should give no consideration to the fact of a northern, southern, eastern or western exposure, but should put in my electric lights and work with them, with a thorough conviction that the best work of my life was to be accomplished in this way. I feel some hesitation in declaring that the electric light is better than daylight, but for many reasons I feel convinced that it is. It is more concentrated, and yet can be diffused as much as is desirable. From this fact, a soft light may be put upon the head, and a more accentuated light upon the draperies, and results obtained which would be extremely difficult under a daylight exposure. I intend hereafter to supplement my daylight exposures at all times after three o'clock, and through the very busy season up to ten o'clock at night. I shall defy any layman or expert to tell under which light the pictures were made, unless it be that the superior quality of the electric lighting will be noticed. It is well known that I do not go off at half-cock on new things and never ride hobbies, but in this system introduced by Messrs. Anthony I seem to see a great future. The wizard of Menlo Park is getting the best of Apollo, the sun god!

Now, a word concerning the beautiful subject of the illustrations. Miss Florence Rockwell is a young lady not yet sixteen years old, who has already had one season of the leading rôles in Shakespearian drama. She promises now to be the future Rachel of this country. As an indication of it, Professor Sizer, the learned and venerable phrenologist, states that, mentally and physically, she is the most perfect organization that has ever come under his observation. I am to be congratulated that the introduction of the electrograph is made with such a charming coadjutor.

GEO. G. ROCKWOOD.

Mr. ROCKWOOD writes us that he will be at all times glad to demonstrate his method of using the electric light apparatus to any photographer who will favor him with a call. His studio is on the ground floor, and is fitted with every modern photographic appliance. He himself is a storehouse of information, and cheerfully submits to any amount of questioning by his brother photographers.

THE RELATION OF PHOTOGRAPHY TO ART.

Discussions regarding the bearing of photographic processes on art are too often obscured by feelings which ought to be kept quite out of the field. On the one hand are the artists and practitioners of (so to speak) the artistic turn, and on the other those who think most of photography as an end in itself, or of literal accuracy of reproduction. Now, between the man who likes to see the spokes of a carriage wheel in rapid motion all brought out as though it were at rest, or to have a trotting horse depicted with his legs in all manner of strange postures, and the man who desires, contrariwise, to have things pictured as they appear to the human eye, regardless of what their real nature may be, there is certainly a great and essential variance. The former is apt to look with considerable mistrust on the latter, who in his turn will likely return the sentiment undiminished. This is perhaps natural and excusable on both sides, but it is unfortunate and can lead to nothing but misconception.

One consequence of this feeling of *méfiance* is that artists are prone to neglect the highly important subject of improvements in the methods of photography. Merely chemical or optical investigations they are often disposed to pass over as something without interest for them.

A greater error can hardly be imagined. If this idea, or anything like it, had found acceptance in the early days of photography, the progress of the science would, to say the least, have been retarded in a great, perhaps in a fatal, degree. Suppose for a moment that Daguerre or Fox Talbot had believed that their investigations were entirely divorced from art, would photography have been developed at all? This is no doubt an extreme supposition, but still, even at the present day, those who are interested in the developments of photography as an aid to art may lose by their indifference to improvements in the methods of photography itself.

This will be the clearer if we consider how differently the artist and the photographer are affected by improvements in their respective handicrafts. Let us always remember that art itself—and in this it differs from all other objects of human effort—is not susceptible of improvement. It is the one thing which has never bettered with time. No new device in the mechanical processes of art can make any real difference in the results to be obtained. These results may be brought about more easily, more cheaply, or more quickly, in virtue of such improvements, but their essential nature and excellence must always depend upon the artist himself, not upon his processes. In Van Dyke's time certain colors, which are now, thanks to the chemists, to be obtained, cheap and of good quality, in every shop, were to be had only at vast expense. So far the artist has profited in pocket and in point of ease he is better off, but the art of portraiture has not advanced. Now such is not the case with photography—being of a purely reproductive nature, its processes are all in all. Once we admit that the science of photography is of any value at all to the artist, its processes assumes a corresponding importance, inasmuch as any improvement in that line means an immediate increase in the capabilities of the instrument at his command.

In other words the photographer offers to the artists a tool of such and such powers. These powers depend upon a thousand and one subsidiary processes, optical, chemical and mechanical, an improvement in any one of which may

immediately result in a vast increase of efficiency. The application of these powers lies with the artist; their extension is the province of the scientific investigator. Surely it is but right for the artist to watch the labors of the scientists with interest, and to be ready at all times to make the most of them.

C. ROTHERHAM.

A SUGGESTION TO MANUFACTURING OPTICIANS.

THERE is one thing which the lens makers and camera builders can do with very little trouble and expense to themselves, and with very much advantage and convenience to their customers. It is so simple, yet so important, that it is almost a wonder that some of our more enterprising and thoughtful manufacturers have not adopted it long ago. Accompanying each lens, even the medium or lower priced ones, there should be a diagram, showing clearly its construction; also a complete descriptive text, showing among other things its width of angle, its depth of focus, the number and comparative light-value of its stops, its relative speed, and, if a doublet, the uses and values of each part of the doublet when used separately. This description should give as complete information in regard to the lens as possessed by the maker himself, and state clearly what its limitations as well as its capabilities may be.

The more advanced workers, and those who are carefully selecting a lens, will naturally, if it is to be for a special purpose or involves a considerable outlay, look well to all these points at or before the time of purchase. But how very few amateurs, especially among those who own and use hand cameras and the ready arranged "outfits," know anything about the lens which they are using. The writer of this article, for instance, is probably a fair sample. For over two years he has used a 4 x 5 R. R. Darlot, fitted to a Hawkeye camera. It has proven by its work that it is an exceptionally fine lens for general all-around work; but for a few purposes it sometimes seems almost an entire failure. Its stops are not numbered; and although we have for over a year past intended to study it out thoroughly, the convenient time never seems to arrive. To this day, if asked the value of the stops, the width of angle, or the focus of the lens, we should be obliged to plead entire ignorance; and this in spite of having read several books and all the current literature on the subject of lenses. The makers of the lens in question might easily have put us in possession of information which we desire and can only imperfectly obtain by a considerable expenditure of time and trouble after looking up formulas, directions, etc.

We have suggested that the information furnished should candidly state the limitations of the lens, as well as its possibilities; and we think that if it were done there would be less danger of beginners at least trying to do impossibilities and then condemning the lens for the results of their own ignorance.

Let our manufacturers try this apparently simple and easy plan and we firmly believe that it will soon become a settled policy. The illustrations and descriptive text of the catalogues will, of course, furnish nearly all this information in the case of the larger and more expensive lenses, but it is specially for the smaller and lower-priced, and particularly the hand camera, lenses that we ask the reform.

C. M. GILES.

ARISTO PLATINO.

PROBABLY one of the most attractive of the many novel things shown at the St. Louis and Ohio Conventions was the new matt surface paper, Aristo Platino. The wonderful range of tones possible was fully demonstrated, and the Cramer Cup, the Special, Genre and Grand Prizes all went to prints on this new paper. We have thought it of interest to our readers to reproduce here the instructions sent out by the American Aristo Company with each package.

Printing.—The best results are obtained from fairly strong negatives, such as will make good prints on albumen paper. Print somewhat deeper than for regular paper.

Washing.—Wash through five changes of cold water. It is not necessary to flatten prints as with the regular paper, there being little or no tendency to curl. Place prints face down, and do not handle them over, but rock the tray.

Toning.—For warm or sepia tones use the plain gold and water toning bath, made slightly alkaline with saturated solution of borax. For black tones use the following toning bath :

Sulphocyanide of ammonium.....	1½ ounces.
Acetate of soda.....	1½ “
Powdered alum.....	1 ounce.
Chloride of ammonium.....	20 grains.
No. 3 gold (“Aristo”).....	1½ drams.
Or, if chloride of gold is used.....	10 grains.
Water.....	60 ounces.

Neutralize the gold with precipitated chalk before adding to the bath and allow the latter to stand two or three hours before using. This bath may be used repeatedly by adding a little gold as required, to keep up the strength. Do not add more than a third of the original amount at a time. Tone until all traces of warmth are removed from the deepest shadows. Exceptionally fine black tones may be obtained by toning prints in the plain gold bath until about the shade desired for medium tones on regular paper; then place the prints in the sulphocyanide bath, and tone until black in the deepest shadows.

Fixing.—Make fixing bath in proportion of 1 ounce hypo crystals to 20 ounces of water. Fix five minutes only, to avoid bleaching.

Final Washing.—Wash one hour in running water and mount in the usual way. Run prints through cold burnisher to shape the mounts.

Sulphocyanide of ammonium is a very uncertain chemical and unless obtained fresh from reliable manufacturers is liable to cause trouble. For those who have any difficulty in making a sulphocyanide toning bath, due to impure chemicals, the bath, put up in concentrated form sufficient to make 60 ounces of bath, is offered at \$1 per bottle.

LANTERN WORK.

THE sheet or lantern screen is an important item in the lanternist's outfit. The amateur home worker usually borrows a sheet or uses the white wall of a room. The latter is probably the best screen obtainable, for practically no light is lost. But walls of the proper kind are but seldom found, and even if such an one is at hand, the lanternist has to encounter considerable opposition when he commences to remove pictures and shift sideboards. The borrowed sheet, too, is a nuisance. The president of the household naturally objects to the driving of

tacks through her best bed linen, and other devices for hanging the sheet usually fail to command her approval. And if this difficulty is overcome, there is always much trouble in properly stretching the screen without doing damage to walls and woodwork. Every possessor of a lantern should own a lantern screen which is white and opaque, compact and portable, and always ready for use.

The size of the screen is, of course, governed by the size of the room and the capacity of the lantern. Having decided on this point, purchase sufficient unbleached calico of good quality, and have it sewn to make a sheet of the size fixed upon. The sewing must, of course, be very neatly done, so that the line of joining shall show as little as possible. This sheet, tacked upon rollers and used so that the seams run horizontally, will serve as a lantern screen, but a vastly superior article may be made with but little trouble. If the lantern be lit and the sheet illuminated, the circle of light will be very plainly visible from the back. This means that a great deal of light is being lost, that, in fact, the best possible result is far from being attained. It remains therefore to so treat the calico that it shall be opaque and white. Make a strong frame of the size of the screen by nailing pieces of wood together. Soak the calico in a pail of water, wring well and tack it down to the wooden frame, stretching it well. Drive a tack in each corner, going around the screen and not diagonally. Tack down one side completely and then the side opposite, pulling the calico well before driving in each tack. Then the other two sides are treated in the same way. On drying, the calico will be found tightly stretched and without a crease. It must now be well sized and then covered with a white paint made by mixing whiting with size. Care must be taken, when brushing on the latter, not to obtain any streakiness. If plenty of the mixture of whiting and size is used, there will not be any difficulty. If there is plenty of storage room in the house, the sheet may be left stretched on the frame and will in this way be very serviceable, as hanging is dispensed with. This, however, is hardly satisfactory, as there is always danger of distortion and of the puncturing of the sheet by leaning things against it. Again the sheet is liable soon to become dirty. The best way is to cut it off the frame with a sharp knife and to tack it on a roller, the seams running parallel to the roller.

The bottom is turned up about 1 inch and sewn over a lath. Indeed, the screen resembles almost exactly a large window blind. In this way a capital sheet may be made, which is opaque and portable and is not easily damaged.

To find the correct distance between lantern and screen, add one to the number of times enlargement required, and multiply by the equivalent focus of the lens used. If, for instance, a slide measures 3 inches, and it is desired to cover a screen 10 feet wide, the scale of enlargement is forty times. To apply the rule, add one, and forty-one times the equivalent focus of the lens gives the required distance between lens and screen.

R. D. GRAY is back from Europe with a trunkful of exposed plates. We understand that he is busy making slides from these and that the public will, during the coming winter, have an opportunity of seeing them, as thrown on the screen by the aid of his tri-color lantern. Our readers will doubtless remember the details of the process, described in the *BULLETIN*, by which three negatives are made of each subject, one for each of the primary colors, and the

lantern slides made therefrom projected on the screen through glasses of colors corresponding to the screens used in making the original negatives.

FROM the *Optical Magic Lantern Journal and Photographic Enlarger* we clip the following, which might be read with profit by those who contemplate exhibiting their slides this year :

“At lantern displays of slides given before photographic societies, in the majority of cases the interest is largely reduced either by the exhibitors giving no information at all about them, or but two or three words in relation thereto. Sometimes a member present will say, ‘Collodion or gelatine?’ and on receiving his reply, will puff out a little tobacco smoke and gaze contemplatively, as if he had received a vast fund of information, and there the matter ends. Often the exhibitor forgets even to state the locality of the scene exhibited, even over pictures about which we have been aware that most thrilling historical narratives could have been told. Those who possess series of slides about particular localities often omit suitable descriptions, or read some narrative about them bought at a shop and often written by a man who therein makes his first appearance in public as an author ; these descriptions are sometimes as interesting as a page of Johnson’s dictionary. A man who possesses such a series of slides would do well to read up extensively the history of each scene represented, and then boil down the vital points into small compass, and put them into such a form as to possess dramatic interest enough to work upon the emotions of those present, who will then feel that they are listening to a man with a mind of his own. After exhibiting a picture of a glen historically supposed to be haunted, he might spin such a yarn that the listeners will begin to fancy that the lights are burning blue, and will go home afraid of their own shadows.”

WE have postal photographic societies, why not express lantern-slide societies? Every owner of a lantern knows his or her stock of slides by heart, and the family’s interest in them is very feeble after the said slides have been through the lantern once or twice. We have print exhibitions and a society lantern slide interchange. We have postal photographic societies for those who desire to have their work privately criticised, and who wish to critically examine the work of others. To the amateur lanternist, a lantern slide interchange managed on similar lines would be a great boon. We shall be glad to hear from our readers on this subject, and offer our assistance towards forming such interchanges. If some half-dozen or so will send us their addresses, we will put them in communication with each other, and so start the ball rolling.

Presuming that twelve form such a society, each member might send twelve slides each month (during winter) to the Secretary, who would box them and start them on their round, with a book for criticism.

JOTTINGS FROM GERMANY.

Removal of Bichromate Salts from Photographic Films.—If too dense negatives are reduced by Eder’s method, that is, by bleaching with bichromate of potash and muriatic acid and redeveloping, it is by no means easy to remove all the yellow color from the film. This latter difficulty rendered the process practically useless for bromide paper, as the paper retained the yellow color, entirely

spoiling the print. Otto Siebert gives a very simple method for the removal of the chrome salt. The stained plate or paper is simply immersed in a solution of sulphurous acid. This reduces at once the chromate to an easily soluble, faintly colored chromous salt, which can easily be removed by washing, a hardening of the film taking place at the same time.

Instead of sulphurous acid, the acid sulphite solution may be used or a mixture of 3 parts of sodium sulphite solution, 1 : 4, with 1 part of tartaric acid solution 1 : 2. Sufficient of this mixture is mixed with water until the latter has a distinct, but not too strong, smell of sulphurous acid, and in this the plate or paper is immersed until all traces of yellow have disappeared. The paper will at first have a greenish color, which disappears during the subsequent washing in water.

Citrate of Silver Paper.—The new Lumière citrate of silver paper is a glossy gelatine paper. It is decidedly less sensitive than the ordinary collodio-chloride paper.

Durable Intensification of Negatives.—The ordinary mercurial intensification has a double disadvantage. In the first place, the detail in the high lights is often completely lost, the negatives thus losing in quality; and, secondly, the durability of such intensified negatives is very likely to be affected; oftentimes they will become yellow and lose entirely their printing capacity. According to the *Photographische Chronik* a much better method is the following: The well-washed negative is flowed with a saturated solution of bichloride of mercury if a moderate intensification only is desired, or is laid in the solution until it is entirely bleached. It is then thoroughly washed and flowed with a second solution. This latter consists of—

Hypsulphite of soda	10 grams.
Chloride of gold solution (1:100)	20 to 30 drops.
Water	100 c.c.

A sufficient quantity of this solution is poured into a graduate, a few drops of ammonia are added, and the plate is at once flowed with the mixture. A brilliant blackening will appear at once. The image is absolutely durable.

Washing of Prints and Negatives.—On this question there is yet great diversity of opinion among photographers, but most of them have already come to the conclusion that, ordinarily, pictures are washed too long. Many tests have confirmed the fact that a negative is washed much more thoroughly under a faucet in ten minutes than by keeping it for hours in a tray of water, even if the water is changed at frequent intervals. The best method for washing a negative is to bring it first under the tap, and then to place it in a washing-box with vertical grooves. It will be thoroughly washed within an hour.

Bromide enlargements are best washed as follows: The fixed print is placed under the faucet for a short time, and is then laid face down upon a sheet of glass and squeegeed. This will press out the superfluous liquid. A subsequent washing in running water for half an hour will then be ample.

Yellow Spots in Gelatino-Chloride Prints.—G. Pizzighelli writes that yellow, yellowish brown and gray spots on gelatino-chloride prints, which are sometimes distributed over the entire picture, but principally are found in the whites and half-tones, are caused, not by defects and impurities in the paper, or in the

materials used in making the combined bath, but are to be ascribed to the presence of hypo. They appear less in pictures toned in the combined bath than in those toned in separate baths. If the yellow spots appear between the toning and the fixing, traces of hypo in the wash water are to be looked on as the cause. If they appear during the toning, the same contamination may be the reason. If the spots appear after fixing, insufficient fixing is the cause. In all cases the spots consist of silver sulphide. If small quantities of hypo come in contact with the paper, the insoluble hypo compounds are formed, which decompose rapidly with formation of sulphide of silver.

The Photo-Lithographic Asphaltum Process.—This so-called rapid-report process, in its principal features, is as follows :

1. Quite thin ordinary sheet zinc is finely ground, polished and matted.
2. The sensitizing of the matted zinc plate is done in yellow light. The plate is laid upon a sheet of glass and is flowed uniformly with sensitive asphaltum. This must be done in a room free from dust. In about half a minute the coating is dry. The plate is then exposed under a line negative, not reversed, and printed in the sun. According to the negative the printing will take from four minutes upwards. The plate is then developed in spirits of turpentine, laid upon a glass plate, and rinsed thoroughly with water. Freed from the dripping water, the plate is exposed to the sun for three or four minutes, gummed, blackened with transfer ink, and is ready to be printed.
3. The transfer is done in the following way. The metal copy is laid picture-side down on a finely polished stone, and a moist sheet of crayon paper, somewhat larger than the zinc plate, serves to press the zinc plate flat to the stone by its adhesive tendency. The transfer takes from one to two minutes.

The particular advantages of the "rapid-report" process are :

- (a) This process is the quickest for the production of a photo-lithographic picture. The metal copy is ready in a few minutes, and in a few minutes more the copy has been transferred to the stone. This process is an actual express process. When an order requires haste, it can be filled the same day.
- (b) This process is the most exact, giving surprisingly sharp and fine results. The metal transfer process is particularly valuable for the production of maps. It has the advantage of reproducing the original with mathematical exactness.
- (c) This process is the cheapest. The zinc plates can be used many times, and the plates will stand several transfers.
- (d) The process is the most simple. No reversed negative is required, and no particular arrangements are necessary.
- (e) Finally, no poisonous chemicals, particularly chrome salts, are employed.

THE RED TONING OF PLATINUM PRINTS.*

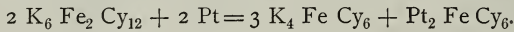
URANIUM, a rare metal, forms, like iron, two kinds of salts. The uranic salts, like the ferric salts, are reduced by light to uranous compounds. Uranic chloride, for example, is reduced to uranous chloride. The change may be made visible by treatment with silver nitrate or chloride of platinum, these being reduced to the metallic state. Formerly much was expected from this process, but little has been done with it.

*From "Photographische Chemie," von R. Ed. Liesegang.

If the paper coated with uranium nitrate or chloride is treated, after exposure, with red prussiate of potash, the image obtained is red, not blue, as with ferric chloride paper. The red prussiate of potash affects only the uranous salts, that is, the exposed parts of the paper, and does not alter the unexposed portions. This blood-red color, the ferrocyanide of uranium, is interesting because it is the color medium of platinum prints of reddish tones. To obtain this tone on finished platinum prints they are immersed in the following solution :

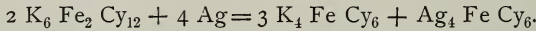
Uranium nitrate.....	10 grams.
Red prussiate of potash.....	2 “
Acetic acid	60 c. c.
Water.....	1 liter.

The platinum image is attacked by the red prussiate of potash, the ferrocyanides of potassium and platinum being produced, according to the equation:



The platinum acts, therefore, on the red prussiate of potash like light ; that is, it reduces it. The hereby formed yellow prussiate of potash reacts in the coating with the uranium salt, producing uranium ferrocyanide. The black metallic platinum has disappeared, and a pure red remains.

In a similar way, fixed silver prints may be transposed into ferrocyanide of uranium pictures :



The red admitting the passage of less actinic light, this method is sometimes made use of for the intensification of negatives. If iron salts are used instead of those of uranium, blue pictures will be obtained.

R. ED. LIESEGANG.

—◆—

[From the Junior Photographer.]

WHAT KIND OF NEGATIVES DO YOU GET ?

Do you get weak negatives, devoid of that pluck and brilliancy so characteristic of good work? Are your negatives full of detail, but so thin and flat that they print a curious color which no bath will properly tone, while nearly all the image disappears in the fixing bath, producing gray, sickly looking prints unfit for use? If this is the case, you have fallen into two errors which prove pitfalls to many ; namely, over-exposure and under-development.

These two evils are of the same nature. It is almost impossible to tell one from the other, but the same procedure will make plates suffering from either defect into good printable negatives.

Many elementary handbooks recommend the novice to err on the side of over-exposure if any doubt exists, but they very rarely mention that a corresponding amount of pyro (if pyro is used) should be added to obtain the required density.

The manipulation required to make weak negatives printable is called intensification. There are many formulas in use, but I will give the only two which I have found to be of any practical service.

The negative should be thoroughly washed when taken from the hypo bath, then immersed in the following clearing bath :

Saturated solution of alum.....	1 pint.
Hydrochloride acid	1 ounce.

To make this solution, take a pint bottle and fill with hot water. Add powdered alum until there is a small quantity left undissolved at the bottom of the bottle. When cold, add the acid, and it is then ready for use. Let the plate remain in the bath for five minutes; the solution can then be returned to the bottle, and used until exhausted.

After the negative has been thoroughly washed, immerse in the following bleaching solution :

Bichloride of mercury.....	2 drams.
Ammonium chloride.....	2 “
Water.....	8 ounces.

Let the negative remain in this bath until it appears a creamy white color right through, then wash for half an hour, and immerse in

Ammonia (.880).....	1 dram
Water.....	4 ounces

until blackened through, then well wash and dry.

The success of this process depends entirely upon the washings between the solutions. Great objection has been raised against this intensifier, on the ground that negatives so treated have been found to be wanting in permanency, and have sometimes become discolored. This is quite true; but investigation has proved that where this has occurred the negatives have not been properly washed between the operations. Great care should be taken when using bichloride of mercury, as it is a deadly poison, and should be kept out of the way of children, who might easily mistake it for sugar.

People who object to its use can substitute the following, which will also serve to use up all their old hydroquinone baths :

Old hydroquinone bath.....	2 ounces.
Citric acid.....	2½ drams.
Red prussiate of potash at 10 per cent.....	2½ “
Water.....	2 ounces.

Pour the citric acid into the hydroquinone bath. When it has lost its well-known tint, add the potash, and finally the water. It is then ready for use. A negative soaked in this becomes dark in a few minutes. The degree of density can be judged by looking at the under side. When dense enough, wash for fifteen minutes. This very simple process gives good negatives that will yield plucky prints. There is enough of this bath to tone about thirty negatives, provided that it is used over and over again. If your negatives are at all yellow, or not so clear as you would wish, place them in this bath; the yellow tone will disappear, and the contrasts become harmonious.

The beginner now has the choice of two good baths. Although I recommend the first named, it requires much more care, but the results obtained are decidedly superior to the latter.

Do you get negatives that are so dense that it is impossible to see through them or to get a good print from them? If so, this is due to over-development and fog, a far worse evil than the other. When such is the case, make up the following reducer :

Ferricyanide of potassium.....	½ ounce.
Water.....	5 ounces.

Put the plate into a porcelain dish, and cover with about 2 ounces of water; then into a measure pour about sixty drops of the above reducer, add the same

quantity of ordinary hypo solution. Pour the water from the dish into a measure, and return the mixture to the plate. Do not pour the mixture into the water, or failure will result. When sufficiently reduced, well wash and dry.

Negatives are sometimes covered with a kind of veil or fog. This can be remedied to a certain extent by first reducing till the fog has disappeared, then afterwards intensifying.

Are your negatives full of pinholes and transparent spots of various sizes? If so, there has been dust on the plate, or minute bubbles in the developer. Camel's-hair brushes are generally recommended to dust the plate with before putting it into the dark slide and before development, but a recent improvement consists of a piece of velvet glued to a strip of wood; this has been found more effective. When the developer is poured upon the plate, bubbles are often formed. The larger ones can be broken by blowing them or touching them with the finger, but still more minute bubbles are sometimes present which are too small to be seen. To prevent these, a soft camel's-hair brush should be gently rubbed over the plate while under the developer.

Are your negatives more dense in one place than another? This is uneven development, caused by flowing the developer unevenly over the surface of the plate. Always apply the developer to the edge of the plate, and with one sweep cover the whole plate at once, and keep it continually rocking.

Do your plates frill at the edges, and the film pucker itself up as if it would leave the glass? This is called frilling, and usually occurs in hot weather during fixing and washing. It is caused by the use of a developer too strong in soda, or the differing temperatures between the solutions and the washing water. The fixing is usually carried on in the heat of the darkroom; the plate is then taken out and put into running water many degrees colder than the fixing solution, the difference of temperature causing contraction of the film. The developing and fixing solutions should always be kept as cool and as near the same temperature as possible.

Should the plate show signs of frilling in the developer, plunge it at once into a dish of methylated spirit, and leave it till the frill disappears. The plates can be advantageously soaked in the alum bath after developing, thus hardening the film to a certain extent. To obviate frilling after fixing, it is a good plan to let the washing water run gradually into the fixing bath. It then slowly replaces the hypo.

If a batch of plates is inclined to frilling, it can be prevented by rubbing a composite candle round the edges before development, or by going round the edge of the plate with a camel's-hair brush dipped in a transparent celluloid varnish. When dry, development can be proceeded with in safety.

The foregoing defects, with a little thought and care, can be remedied; and it should be borne in mind that "prevention is better than cure." A minute properly spent beforehand may save many hours of useless labor.

Always take a print before any of the above "doctorings" are resorted to. You will then be able to judge better what is wanted. When the negative has arrived at a satisfactory state it should be varnished to protect the film, which, though apparently tough, is very liable to become scratched or stained in the printing. Suitable varnishes may be obtained from any dealer much cheaper and better than the tyro can make himself.

THE RECOVERY OF ACCIDENTALLY EXPOSED PLATES.

A PLATE which has received an exposure not exceeding certain limits can be restored to its original condition by the action of certain oxidizing agents. This fact is of great importance in the case of accidental exposures. Two exposures are sometimes made on the same plate, or a paper box containing plates may become broken; in either of these cases the effect of the light can be annulled by the above treatment. If a box of plates should be accidentally opened in daylight, the top plate will probably be beyond recovery, but the remainder, which were partly protected, could easily be restored and made fit for service.

The effect of friction or concussion is identical with that of light. Lines traced on the surface of a plate with a hard-pointed instrument will develop perfectly black, or a sharp stroke with any hard substance will result in a black mark after development. Plates which are packed face to face will, if not packed carefully, rub against each other and cause scratches, which will develop black, though there may not have been any visible marks before development. A plate may be entirely freed from defects of this nature by treatment with an oxidizing solution.

Among the oxidizing agents available for this purpose are bichromate of potash, permanganate of potash, and the salts of copper. An exposed plate, after being treated with a solution of bichromate of potash, will, except in extreme cases, show no signs of darkening under the developer; if the developer is very strong or the exposure prolonged beyond a certain limit, a faint fog will appear; but generally there will be no appreciable action. The solution to be used should be about 1 per cent. strong, and made slightly acid with sulphuric acid. The plate should be soaked for about five minutes, and then carefully washed and dried. A thorough washing is necessary, for any bichromate remaining in the film would impair the sensitiveness of the plate, and would also greatly retard the action of the developer. If the washing has been thorough, and the drying conducted properly, the plate will be very nearly as sensitive as it was originally. Permanganate of potash is more powerful than bichromate.

A solution of 1 part permanganate in 300 parts of water, when applied to an exposed plate, will completely destroy the effects of light. In this case, however, the plate is never perfectly clear, since the permanganate oxidizes the gelatine of the film and produces a red precipitate of oxide of manganese; for this reason the permanganate solution is not suitable for practical purposes. A 2 per cent. solution of bromide of copper works well as an oxidizing solution, but the sensitiveness of the plate is very much reduced by its action. Bromide of copper can be applied in a much stronger solution, and its action carried much further than that of either bichromate or permanganate of potash, since there is no oxidizing effect on the gelatine, and consequently no danger of insoluble precipitates forming in the film.

The copper solution may be used as a remedy for extreme over-exposure which could not be corrected by modifications in the developer. When such a case of over-exposure is suspected, the plate may be placed, before development, in a very weak solution of bromide of copper for a short time, and then thoroughly washed and developed in the ordinary way. Of course, this manner of working

depends to a certain extent on chance, for there is no way to judge of how far the action of the copper solution should be continued.

In all of these operations the greatest care must be taken to keep the solutions separate; every trace of oxidizing solution must be removed from the plate before drying, and the oxidizing and developing solutions must not be used in the same trough.

In using the restored plates a very full exposure should be given—not only on account of the reduced sensitiveness, but because the development must not be forced. When a strong developer is necessary, great care must be taken not to bring out any traces of the old exposure.

CORWIN GITCHELL.

GOLD, SILVER AND PLATINUM IN PHOTOGRAPHY.

In a paper read before the London Camera Club, and published in full in their excellent publication, E. Seyd gives the following methods for the recovery of the silver, gold and platinum from photographic waste.

“To extract silver from paper clippings, or any dry materials: Burn the material in a closed iron crucible at a dull red heat until well calcined; the silver can be then extracted in two ways. 1. Boil the residue in nitric acid, filter, wash the charcoal left behind in the filter, and add to the bulk of solution, dilute with distilled or clean rain water, and precipitate the white chloride by means of common salt or hydrochloric acid until no more precipitate is thrown down. Allow the precipitate to settle, pour off the mother liquor, and wash the chloride of silver two or three times with clean water, each time allowing the chloride to settle before pouring off the water. Add distilled water and 5 per cent. of sulphuric acid, throw in a clean piece of zinc, and stir from time to time; the white chloride will be speedily converted into pure silver in a fine state of subdivision. Pour off the acid solution and wash the black precipitate two or three times, place it in a small assay crucible of fine clay, and it can be easily reduced to fine silver by the aid of an ordinary fire and a pair of bellows.

“2. By cupellation. Mix the calcined paper with about half its bulk of litharge in a crucible, keep at a white heat for half an hour, and subject the resulting button of silver lead to cupellation.

“Cupellation is a beautiful and interesting operation, advantage being taken of the property of bone-ash to absorb the oxides of the baser metals contained in any alloy when subjected to an oxidizing blast, gold, silver and platinum only being left behind in the form of pure metal. One of the smaller gas or benzoline furnaces by Fletcher, of Warrington, is needed, and in all cases it is better and quicker to employ this method, when possible, than to refine by the wet processes. The process is briefly as follows: Cupels made from bone-ash compressed into the form of cups by a brass mould are employed on a small scale. On a large scale a shallow bath is made of bone-ash, in which the alloy is melted, and the blast passing over this carries the oxides in a fluid condition over to be absorbed by the layers of bone-ash. As the operation approaches completion, and the lead and alloys are gradually being removed from the bath of molten metal, the spectacle is an exceedingly attractive one, the films of oxide pass over the metal in all the brilliant colors of the rainbow—green, orange and bright blue seem to circle round and round with great rapidity, and as the last

vestiges of the base metals leave the bath, the brilliant coloring disappears in a flash, and the residue takes the pure bright look of solid silver or gold.

“To extract pure silver from coins, ornaments, etc., dissolve in nitric acid with gentle heat; keep on adding small quantities of acid until all silver is dissolved, dilute with two or three times the bulk of water and precipitate with hydrochloric acid, proceeding as above.

“To extract gold and silver from general photographic waste in water, and containing foreign salts. This process will vary according to the nature of the waste material, and it is somewhat difficult to give practical directions. In a general way it will be wise to collect the mud which has fallen to the bottom of the vessel, and set this aside, but as the solution itself will probably contain gold or silver, this can be thrown down by protosulphate of iron and common salt. Should, however, the water contain a variety of salts in solution, other and more complicated processes must be followed, otherwise considerable loss will result. The mud should be filtered, dried, and dissolved in nitric acid, which will extract the silver. That portion which is not dissolved contains gold and platinum. This should be boiled in *aqua regia*, and the gold and platinum precipitated in a metallic form by protosulphate of iron. The resulting black mud, mixed with borax, can be melted into a button by the ordinary blow-through jet of the lantern. To separate the gold and platinum is a difficult and tedious process, and is best effected by amalgamation with mercury which will carry away the gold with it, leaving the platinum. The mercury is driven off by heat, and each metal can be melted separately. It should be noted that only small quantities of platinum can be melted by the ordinary blow-through jet. Larger quantities can be reduced by Fletcher’s oxyhydrogen furnace.

“The preparation of the salts of the three metals from the pure metals themselves is exceedingly simple. The only difficulty will be found in getting rid of free acid. This can be best effected by crystallization, but as the chlorides of gold and platinum are subject to the action of the air, they had best be kept in solution. In dissolving gold or platinum in *aqua regia* the solution should be evaporated nearly to dryness in an open vessel, which should be removed from the sand bath before all traces of moisture have disappeared, and the same plan must be followed when making silver nitrate. It should, however, be remembered that the amateur must not expect to get large-sized crystals unless his operations are conducted on an extensive scale.”

Colonel V. M. WILSON, president of the firm of our publishers, has returned from Europe, having had a pleasant homeward trip on the *Fuerst Bismarck*. While abroad he visited several of the business houses with which for thirty years or more he had had business relations, and became personally acquainted with many whom he had previously known only by correspondence. We are glad to note that the Colonel is greatly benefited in health by his trip. Close application to business will tell on the strongest constitutions, and the Colonel’s many friends are delighted with the change for the better, due to his short but health-giving vacation.

PHOTOGRAPHERS’ ASSOCIATION OF MISSOURI.—This Association meets in convention at Macon, Mo., October 16th and 17th. All photographers are invited to attend.

CHILD STUDY.

It is not an easy thing to photograph children, and the difficulty increases with the number in the group. There are some operators who seem especially gifted in this direction ; who have a happy knack of pleasing and interesting their little models, bringing out their best features and reproducing the grace



inherent to all children. Mr. Borgfeldt, of Brooklyn, who supplied the Aristo-Platino print from which the half-tone reproduction was made, is evidently such an one. All three children have a lovable, naive expression, showing confidence and pleasure. The general arrangement may offer scope for criticism, but the photographer has, we think, done his work well.

EVERY farm should own a good farmer.

Correspondence.

UNITED STATES CONSULATE,
MOSCOW, RUSSIA.

GENTLEMEN :

I receive your *BULLETIN* regularly, and thank you for the courtesy of sending the same.

Having frequently had occasion to refer Moscow merchants to the advertisements your valuable paper contains, I hope the benefit will be mutual. You may be assured that I am always ready to promote the enterprise of American manufacturers and merchants who wish to extend their trade to Russia, and that I am willing to give any desired information in regard to commercial affairs at Moscow.

Yours, etc.,

ADOLPH BILLHARDT,
U. S. Consul.

GENTLEMEN :

The list of hotels in the United States who recognize amateur photographers by making arrangements for their comfort and convenience is so small that an addition to the ranks should be noticed by the photographic press, and amateurs will "do the rest."

I therefore take pleasure in advising that Messrs. Hiram Ricker & Sons, proprietors of the famous Poland Spring House, at South Poland, Me., have just completed a magnificent photographic studio, in which there are three darkrooms for the exclusive use of amateur photographers. These rooms are fitted up with all modern conveniences, with an unlimited supply of pure cold running water.

Will you, for the good of the cause, mention this fact in Anthony's Photographic *BULLETIN*, thus encouraging other hotel men to do likewise?

AMATEUR.

OUR ILLUSTRATION.

Our frontispiece is an exquisite piece of work from the studio of George G. Rockwood, New York. It will be interesting to our readers for many reasons. The negatives from which the large series of prints required were made, were made by the Anthony electric light apparatus, which has been fully described in previous issues of the *BULLETIN*. The subject is a charming one, and Mr. Rockwood, with his accustomed tact and skill, has made an exquisite picture. Thirty negatives were made in quick time, and every one was of the finest quality. Mr. Rockwood declares that the electric light is better than daylight, and certainly the results bear out his assertion. For lighting, posing and those subtle qualities, which, combined, make an artistic photograph, our illustration can hardly be equaled. The light was reflected from a screen of the pattern described in our last issue, and a double reflecting screen was used on the other side of the subject. The exposure was as rapid as with good daylight. There seems to be little doubt but that the studio of the future will be, like Mr. Rockwood's, a spacious apartment on the ground floor, and that the source of light will be the electric arc, thus relieving the photographer of many difficulties attending the use of the skylight.

From all over the country we are receiving enquiries regarding the use of this light. Those who can find time to visit New York will do well to avail themselves of Mr. Rockwood's invitation, and call at his studio, 1440 Broadway. From personal experience, we can assure them of a hearty welcome.

The prints are on Aristo, Jr., a paper which is free from all the troubles which seem to accompany the majority of other brands. Not a damaged or poor print was found in the whole batch, and Mr. Rockwood tells us that he is simply delighted with it. There are now three brands of paper manufactured by the American Aristotype Company—Aristo, extra brilliant, blue label; Aristo, Jr.; and Aristo-Platino. The fact that nine-tenths of the principal photographers in the United States are using one, or other, or all of these brands, is ample evidence of its perfection and constant quality.

SOCIETIES.

CALIFORNIA CAMERA CLUB.—Notice of Demonstrating Committee.—“It has long been the wish of the Club that the Club house become more of a photographic school than it has ever been, and it is the desire and intention of this Committee to make it so. With this object in view we have commenced with a series of lectures and practical demonstrations that will be instructive and a benefit to its members. On Wednesday evening, September 5th, the first demonstration was made by Mr. O. V. Lange, the subject being “The Camera, With Its General Uses.” This will be followed by a demonstration on the construction of lenses, the use of the different kinds and makes. Then we will take up exposure, plate making, photographic chemistry, developing with different developers, printing in the different branches on different kinds of paper and plates, lantern-slide making, etc.

“We have laid out a schedule of classes, to be held every other Wednesday evening, that will carry us through the winter months, and have secured a number of experts who will demonstrate the above subjects. We trust that the members will take an interest in these demonstrations and attend regularly.”—H. B. Hosmer, W. E. Goodrum, Dr. S. C. Passavant, Committee on Classes and Demonstrations.

SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.—The annual exhibition of lantern slides, exclusively the work of members of the Society, will take place on Friday evening, October 26th. Contributions of slides may be made any time before Saturday, October 20th—the sooner, the better. The Lantern Slide Committee will be in attendance every Wednesday night till further notice, to test slides and furnish information or instruction if required. Slides should be marked on the right-hand side with the title and member's name, and with a white thumb label on the lower left corner. Explanatory notes, when necessary, should accompany the slides. As the annual contribution to the American Lantern Slide Interchange are made up from the slides exhibited in October, it is hoped that every member having interesting negatives will assist in making the set worthy of the Society. Views of New York City preferred, and are especially requested. Frank C. Elgar, F. C. Grimm, William M. Murray, H. Schoen, A. E. Helmrich, Lantern Slide Committee.

PHOTOGRAPHIC EXHIBITION.—A competitive exhibition of prints and lantern

slides, open to all amateur photographers, will be held in connection with the Twenty-third Regiment Fair, in the new armory, Bedford avenue, between Atlantic avenue and Pacific street, Brooklyn, from November 14th to 29th. Silver medals and certificates of merit will be awarded by three judges, Albert J. Le Breton, of Washington, D. C.; T. J. Burton, Secretary of the Society of Amateur Photographers of New York, and Alexander Black, of the Brooklyn Institute. Entry forms may be obtained from, and should be sent in to, G. E. Hall, 211 Centre street, New York City, not later than October 15, 1894.

ERIE CAMERA CLUB.—An association of photographers has been formed at Erie, Pa. The club has fine headquarters, with a large and well-equipped darkroom, and meets on the second Tuesday evening of each month. Officers: President, E. C. Slater; Treasurer, I. E. Briggs; Secretary, Harry L. Moore, 804 State street, Erie, Pa.; Directors, Ottamar Jarecki, T. H. Carroll, J. M. Force, B. B. Nagle and E. W. Sheldon.

CHAUTAUQUA PHOTOGRAPHIC EXCHANGE CLUB.—Has no meetings, as members are scattered from east to west coasts. Members exchange prints four times a year, all pictures being sent to the Secretary, who distributes them. There are twenty-one members, about sixteen of whom send in prints.

SPRINGFIELD CAMERA CLUB.—The regular monthly meeting was held on September 20th, a large number of members being present. In the absence of the President, Mr. W. M. Lester occupied the chair. John H. Adams, Leland Cone and Andrew N. Wilton were elected active members. The report of the Secretary of the New England Lantern-Slide Exchange was read, giving the names of those of the Club's set which had received the majority of votes. A proposition concerning new rooms for the Club was discussed, the matter finally being left with the Executive Committee.

POSTAL PHOTOGRAPHIC CLUB.—The October album of this Club was issued on September 15th. It contains seventy-six prints, made by various processes, and all of a high order of merit. These were contributed by thirty-seven members, three of the Club failing to respond. Accompanying it, the March album, which contains seventy-nine prints, made its second round. This Club is doing really good work. The membership list is at present full (forty members), and there are several names on the waiting list.

FRANKFORD CAMERA CLUB OF PHILADELPHIA.—Officers: President, Dr. W. Ekwurzel; Vice-President, Richard B. Watmough; Secretary, John M. Justice; Treasurer, J. Howard Horrocks. Executive Committee, B. S. Thorp, H. H. Sutcliffe, J. M. Justice, Mrs. E. B. G. Justice, Miss M. C. Shallcross.

ALBANY CAMERA CLUB.—The first meeting of this session was well attended and much enthusiasm shown. President Paterson was in the chair, anxious, as usual, to hear and see anything of interest to the Club. Mr. W. W. Byington, one of the most enthusiastic members, was elected director to the Lantern Slide Interchange. The advisability of an outing was discussed, and a resolution passed that a committee be appointed to arrange for an outing of one or two

days, the place and time being left to the discretion of the Committee. Messrs. Byington, Pease and Ball are the Committee. The Board of Directors passed a resolution requesting Mr. Pirie MacDonald to exhibit his pictures which took the prizes at St. Louis at the October meeting. Mr. MacDonald is an associate member of the Club. The slides of the St. Louis and the New York Clubs were shown. Many of the New York slides were favorably commented on, but the collection of slides as a whole did not seem to contain the happy selection of subjects which is usual. The same might be said of the St. Louis slides.

PHOTOGRAPHERS' ASSOCIATION OF INDIANA.—A call issued for photographers to meet on Wednesday, September 19, 1894, at Grand Hotel, brought together a good-sized crowd of enthusiastic photographers.

On motion, Adam Heimberger, of New Albany, was called to act as temporary chairman, and stated the object of the meeting, after which E. E. Shores was elected temporary secretary.

The following were present: George E. Holloway, Terre Haute; I. Devos, Warsaw; D. D. McKee, Anderson; C. C. Pike, Indianapolis; E. C. Wilkinson, Danville; Ben Larrimer, Marion; F. R. Barrows, Fort Wayne; E. O. Smith, Indianapolis; Miss Iva Roach, Cicero; F. S. Biddle, Indianapolis; W. H. Potter, Indianapolis; S. L. Wilhite, Bloomington; B. M. Donnelly, Monticello; C. R. Reeves, Anderson; W. H. Williams, Anderson; O. T. White, North Vernon; W. Sciberd, Indianapolis; S. Sciberd, Indianapolis; J. B. Nickerson, Lebanon; A. J. Summers, Bloomington.

The following parties represented manufacturers, etc.: C. E. Sargent, S. G. Loft and A. M. Fell.

On motion, the Chairman appointed the following Committee on Constitution and By-Laws: Larrimer, Devos, Holloway, Wilhite and Shores. The Committee retired, to report at 2 P.M.

The meeting adjourned to meet at 2 P.M.

Promptly at 2 o'clock the Chairman called the meeting to order. Mr. Larrimer, chairman of committee, presented the report of the Committee on Constitution and By-Laws.

Every member took active part in the discussion of the Committee's report, and after several changes, on motion of W. H. Potter, same was adopted.

Immediately after the adoption the meeting went into the election of officers, to conform with Constitution and By-Laws.

E. E. Shores placed in nomination Adam Heimberger for President. The motion was carried by unanimous consent. President Heimberger thanked the meeting for their kind expressions, but preferred some one else to the position. This the meeting refused to do, so he accepted.

The election of vice-presidents resulted as follows: First Vice-President, George G. Holloway, Terre Haute; Second Vice-President, F. R. Barrows; Secretary, E. E. Shores, Vincennes; Treasurer, Ben. Larrimer, Marion.

The constitution provides for two trustees, to be appointed by the President. I. Devos, of Warsaw, and S. L. Wilhite, of Bloomington, were appointed.

Motion by B. Larrimer carried, that the Constitution and By-Laws be printed, and a copy sent to every photographer in the State.

Motion by G. G. Holloway, that Secretary secure the necessary stationery, seal and printing of constitution, and send copy of proceedings to the journals.

A vote of thanks was tendered to Grand Hotel Company for their kind attention. Also a vote of thanks to H. Lieber & Co., Indianapolis, for their courtesy, etc.

Motion carried, that Indianapolis be selected for next convention. Time of holding and all other arrangements was, on motion, referred to Executive Committee, to meet upon call of the President.

Collection of dues followed.

The following communication was read and ordered spread upon the minutes :

“LIMA, O., September 18, 1894.

“MR. ADAM HEIMBERGER,

“Indianapolis.

“*Dear Sir,*—Through the columns of current issue of the *Photo-Beacon* I note the call for a meeting looking to the organization of a State association in your good old State of Indiana. It is a matter of pride to me to see this most commendable object agitated in other States, and particularly in our sister State, for the reason, as you know, our Ohio Association originated in Lima, O., and has given birth to the splendid organization of to-day. It has been my pleasure to receive many letters of inquiry from surrounding States as to the proper course to pursue to effect an organization. Advice to you would, in my opinion, be unnecessary, having considerable experience with larger bodies. However, State associations differ from national. With State bodies you have friends and near neighbors to deal with. The first thing, of course, is organization. The next and most vital essentials, that always go hand in hand, unity and harmony. The strongest obstacles you will encounter at the start; these overcome, and success is sure to come.

“If it were possible at the beginning to review the success of your work, every man in the State of Indiana would extend a helping hand and assist in effecting a speedy organization. All other professional bodies have their yearly meetings, and work for their own particular mutual good. This is where we have always been weak. They grow rich, while we photographers grow poor in purse and older and richer in experience. Nothing can ever be done for the common good of the photographer through national associations. State associations are the best associations for this particular purpose, to place us on a level of respect and confidence with other professions.

“Do not wait for large numbers to come to your assistance. Appoint a meeting, set the date for the meeting and select Indianapolis as the most centrally located, and tell everybody the Indiana State Association will hold their first annual meeting on such a date.

“There were only about a dozen at our first meeting in Lima. The second meeting was smaller, and just before the organization of the State organization there were only two of us left when I took the matter in hand and wrote to several good, liberal, big-hearted men, and made it go. And to-day we have an association.

“Try it, boys; we can't be with you in flesh, but we can in heart and spirit.

“Fraternally yours,

“LEROY H. HUME.”

All members present were pleased with the first attempt, and all feel confident that this association will lead all others; after which the meeting adjourned.

A WELCOME TO MR. PRINCE.—PROPOSED CINCINNATI PHOTOGRAPHIC SOCIETY.

A BANQUET, in honor of the return of Mr. L. M. Prince from Europe, was given at the St. Nicholas Hotel, Cincinnati, on Saturday, September 15th. Mr. R. P. Bellsmith presided, and letters of regret were read from Mr. C. S. Abbott and others. The toast to Mr. Cramer was heartily drank, and a telegram to this gentleman notified him that his friends were thinking of him. All the leading photographers of Cincinnati were present, and Mr. George Bassett, of the G. Cramer Dry Plate Works. Mr. Rumbach responded to the toast of "The Ladies," and then Mr. Prince gave an interesting description of his trip abroad. Mr. E. B. Coré proposed the formation of a Cincinnati photographic society, to promote a more cordial feeling among the photographers of that city. The suggestion was received with much favor by all present. Mr. Bassett spoke on the part demonstrators had taken and were taking in the promotion of the friendly feeling and desire for closer intercourse that was now so plainly manifesting itself among photographers. After a few well-chosen remarks from Mr. Bellsmith, the party separated, every one voting it a great success.

BOOKS RECEIVED.

All books noticed under this heading may be obtained from our publishers.

MÉTHODE PRATIQUE POUR LE TIRAGE DES ÉPREUVES DE PETIT FORMAT PAR LE PROCÉDÉ AU CHARBON. By G. Chéri Rousseau. Paris, Gauthier-Villars et fils. This little brochure does not pretend to divulge any new process. Written by a thoroughly practical man, it gives, in a simple and precise manner, a minute description of the methods used in obtaining good carbon prints.

L'ART PHOTOGRAPHIQUE DANS LE PAYSAGE. By A. Horsley Hinton. Paris, Gauthier-Villars et fils. 3 Fr. It is no longer sufficient, in order to be a successful photographer, to memorize a collection of formulas and certain special manipulations. Taste, judgment and æsthetic knowledge are indispensable for the obtaining of truly satisfactory results. In this book are given the proper indications to guide the reader in the education of his photographic self. The author is a man of great experience in photography, and the work will be read with much profit and interest.

WE are in receipt of the new catalogue issued by W. D. Gatchel. It is filled with matter of great interest to photographers, and is right up to date. We congratulate the compiler on his excellent work.

HANDBUCH DER PHOTOGRAPHIE. Revised Edition, Part II, by Dr. H. W. Vogel; published by Robert Oppenheim, Berlin. This is one of the standard works on photography, and previous editions have been translated into several languages. This new edition is, of course, right up to date. The following is a synopsis of its contents: The intensity of light and its measurement; optical photometers; artificial light sources and their photographic action; reflection and halation; light, color and color photography; chemical action and light absorption; properties of the optical sensitizers and their action on collodion and gelatine plates; photography in natural colors; researches of Vogel, Ulrich, Kurtz and von Hübl; Joë's colored lantern slides; apparatus; the recent improvements in lenses.

WE are in receipt of Volume 24 of *The Photographic Times*. It is an excellent volume, and occupies an honored position in our library.

TABLE OF CONTENTS.

	PAGE		PAGE
AN INTERESTING SUBJECT	323	JOTTINGS FROM GERMANY	329
ARISTO-PLATINO	327	LANTERN WORK	327
A SUGGESTION TO MANUFACTURING OPTICIANS, by C. M. Giles	326	OUR ILLUSTRATION	339
A WELCOME TO MR. PRINCE	344	SOCIETIES	340
BOOKS RECEIVED	344	THE ELECTROGRAPH, by Geo. G. Rockwood	324
BROMIDE PRINTING	315	THE INTERNATIONAL ANNUAL	318
CARBON PRINTING FOR PROFESSIONALS	316	THE RECOVERY OF ACCIDENTALLY EXPOSED PLATES, by Corwin Gitchell	335
CHILD STUDY	338	THE RED TONING OF PLATINUM PRINTS, by R. Ed. Liesegang	331
CORRESPONDENCE	339	THE RELATION OF PHOTOGRAPHY TO ART, by C. Rollet	325
EXPOSURE AND EXPOSURE METERS	313	WHAT KIND OF NEGATIVES DO YOU GET? by R. Penlake	332
GOLD, SILVER AND PLATINUM IN PHOTOGRAPHY	336		
ITEMS OF INTEREST	319		



NEGATIVE & PRINT BY
S. L. STEIN, CHICAGO,
MILWAUKEE.

NEGATIVE ON
CRAMER PLATE.

"ARISTO-PLATINO."

ANTHONY'S Photographic Bulletin.

EDITORS :

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

FREDERICK J. HARRISON.

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No. 11.

PHOTOGRAPHING INTERIORS.

WITH the approach of winter the opportunities for out-door photography diminish, and the photographer naturally devotes more attention to the photographing of interiors. This is a subject intensely fascinating and full of difficulties. In the majority of cases, however, there is plenty of time for the careful consideration of details, and often the arrangement of every part of the subject is in the hands of the operator. The state of the weather may be disregarded, and, with the aid of the flash lamp, the work may be carried on without the assistance of daylight. With beginners, there is always evinced a tendency to include too much in the picture, to collect in a small space every odd piece of furniture in the house, giving a result obviously unnatural, and serving only as a sort of inventory of the household effects. In looking over a batch of photographs of interiors, we found flatness, halation, under-exposure, poor arrangement and improper selection of point of view to be the main troubles. One or other, or several, of these defects marred many pictures which were in other respects of good quality.

Flatness is a great evil at any time, but becomes very apparent in interiors. It is due principally to improper lighting. The light should come from the side, not from the front. This applies, also, of course, to pictures made by flash-light. The lamp is best fired from a position to the left or right of the camera, the direct light being screened from the lens.

Halation is a trouble often met with, but easily avoided or remedied. In many cases brilliantly lighted windows may be screened from without, or even excluded entirely from the picture. The pulling down of the shades often mars the effect, but the hanging of a white opaque screen outside of the window and leaving the shade in its usual position will give satisfactory results. In many cases the apertures, through which strong light streams, are inaccessible. Halation may in these cases be partially, and often wholly, avoided by the use of

multiple-coated or backed plates. The ordinary plates may be backed by applying the following mixture with a camel's-hair brush:

Lampblack or ivory black.....	3 ounces.
Spirit varnish.....	4 “
Glycerine	3 “
Alcohol	8 “

This dries quickly and may be removed, just before development, with a damp sponge. Oftentimes, however, the plates are exposed without any precautions against halation being possible, and then its effect must be minimized during development. Commence with a very weak developer, using but very little of the alkali. When the windows or other brilliantly illuminated parts appear, they are carefully watched, and when not developed quite as far as desired, the plate is immersed in a very dilute solution of potassium bromide. The surface is roughly dried by means of a piece of blotting-paper, and then, with a fine camel's-hair brush, the over-exposed parts are painted with a saturated solution of potassium bromide. After a half minute or so the bromide is washed off, and the plate developed in the usual manner. With care, this method will yield the finest results. If, for lack of such treatment, the negative shows pronounced local over-exposure, these parts may be mechanically reduced by gently rubbing the dried film with a soft rag dipped in alcohol.

Under-exposure may be avoided by the use of an exposure meter. Over-exposure is capable of treatment. Under-exposure usually means failure. If, however, the under-exposure is, like the halation, local only, it may be remedied during development by treatment with a brush charged with a solution of sodium carbonate; or the parts may be warmed by breathing upon them, and the action of the developer thus stimulated.

The want of proper arrangement and poor selection of point of view often spoil an otherwise good negative. Cultivate first the natural, and seek for fancy effects after you have learned to walk. It is not always easy to figure out on the ground-glass the general effect, but persistence under the dark cloth will enable the eyes to become accustomed to the dim light, and it is surprising in how short a time the eyes will adapt themselves to circumstances. When possible, put dark objects in well-lighted places and help out dark corners with objects that will reflect the small amount of light that reaches them. Have an eye to the swing-back and use a level. Avoid reflections from glazed pictures. Should these be noticed, the angles of the pictures may be slightly changed by placing a piece of cork or paper at one corner between the frame and the wall.

Certain subjects, which the operator is often called upon to photograph indoors, offer many difficulties unless properly handled. Mr. Charles Dawson, in the “International Annual” for 1894, gives the following useful hints:

“Machinery can be photographed by covering the bright parts with a mixture of tallow and turpentine; this can afterwards be easily removed with cotton waste.

“Laces, etc., should be fastened upon a sharply contrasting colored background, such as black upon white and *vice versa*.

“Ornamental glassware should be taken against a dark background, to make the transparent parts appear black in the print.

“Hollow glassware should be filled with a colored opaque fluid.

“Hollow silver and plated ware should be filled with ice water; the condensation on the outside will then dull the reflecting surfaces.”

CARBON PRINTING FOR PROFESSIONALS.

IN our October issue the general ease of manipulation of carbon tissue was discussed and the few materials necessary for the successful working of this beautiful process enumerated. There is an idea prevalent that the introduction of carbon tissue into an establishment means the ousting of the silver processes. This is quite an erroneous idea, for the two can be worked side by side if some little caution be observed. With the daylight carbon tissue recently introduced by the Autotype Company the process is much simplified, as the special drying room is dispensed with. This tissue can be dried out in the open air, in daylight, and is in every way satisfactory, for the support to which it is squeegeed protects the surface from dust and injurious gases.

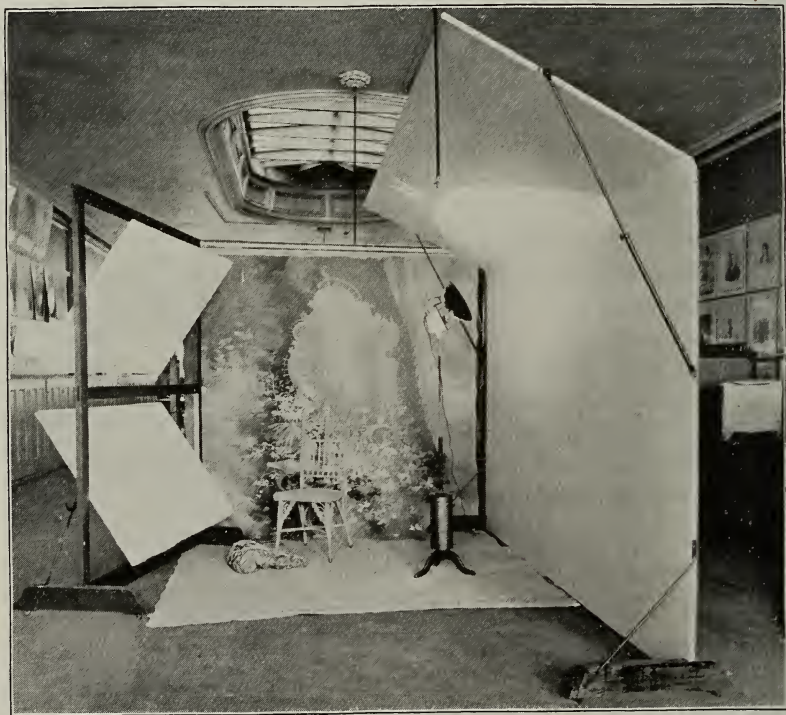
In using the ordinary tissue, certain precautions are necessary during the drying process. Indeed it may be said that the efficiency of the tissue depends upon this part of the preparation of the paper. If dried too quickly, reticulation often occurs, and again the half tones are not brought out to the best advantage. If dried too slowly there is a danger of the tissue becoming more or less insoluble. Vogel has found that carbon tissue which required more than twelve hours to dry was practically useless, but found also that by the addition of ammonia to the bichromate sensitizing bath the tissue retained its virtues, even if kept in a moist condition for twenty hours. While it is true that the paper is practically insensitive while wet, it must, of course, be dried in a room free from actinic light. In fact it is well to use it as one would a wet plate. A sufficiency of yellow light to illuminate the room perfectly will do no harm. Again, all noxious vapors must be rigorously excluded. The tissue should dry in from seven to eight hours. If much of the tissue is drying, an electric fan, to insure a good current of air, will be found useful. All dust must be avoided. Indeed it will be found best for many reasons to dry the tissue over night, and thus find it ready for use in the morning. Under such circumstances a special drying room can be dispensed with and the processes of sensitizing and drying carried on without using up valuable printing time.

C. M. HAYES & Co., of Detroit, Mich., send us four clever studies, printed together by cutting the plates and vignetting with Strauss marl. The effect is very pleasing.



THE ELECTRIC LIGHT IN PHOTOGRAPHIC STUDIOS.

WE have in previous issues discussed the desirability of artificial light in the studio, and suggested the adoption of the electric light, not in addition to, but as a substitute for, daylight. Several hundreds of letters have reached us during the past month, all in the same strain. Galleries are on the fourth or fifth floor, and the only opportunity for the display of specimens is a small showcase at the entrance. There is no possibility of attracting the passer-by, and the general inaccessibility of the studio is complained of in every letter. Yet rents are, like the studio, high. Our correspondents, many of them, have fixed on a desirable location and write to know whether they are justified in making a decided move and entirely giving up the skylight. Our own experience, and that of all who have invested in the electric apparatus, is that even better results may be obtained with the artificial light. As pointed out in the *Photogram*, the



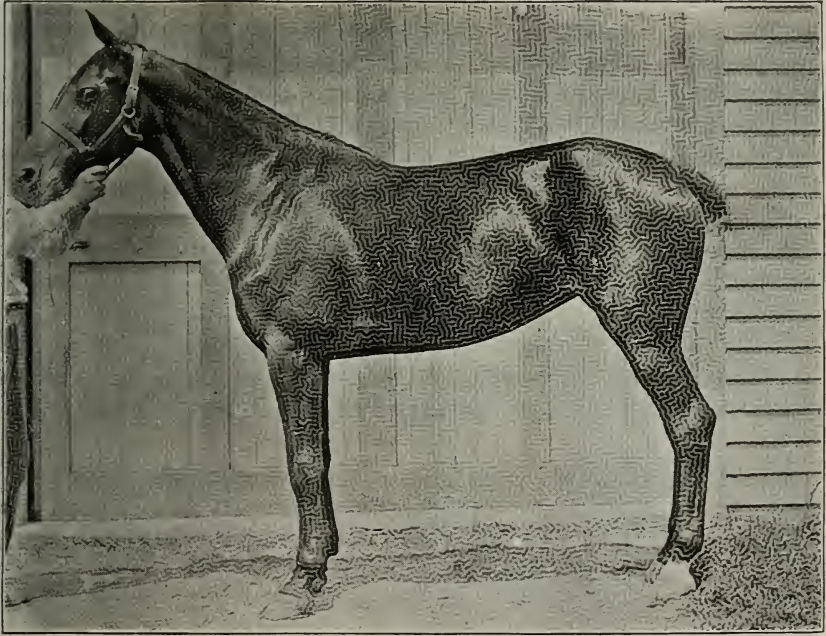
advantages of the light as compared with daylight are : First, ability to work at any hour, independent of daylight ; second, economy and comfort to sitters, through the possibility of using ground-floor rooms ; third, regularity of results, which leads to economy in time, labor and materials, because the lighting and exposure are brought under control.

The excellent illustration and the remarks by the veteran photographer, George G. Rockwood, in the October BULLETIN, should remove all doubts as to the efficiency of the light. We reproduce here in half-tone a photograph of the apparatus as it stands in our office. The light is reflected from a 12-foot screen, and a side reflector permits of any lighting effect. Photographers who are in our neighborhood are invited to give us a call and test the light for themselves.

The time of exposure is the same as with good daylight, and the light is uniform. When ordering the apparatus, it is necessary that the kind of current and the voltage be furnished. These details may be obtained from the electric light company, whose mains are nearest to you.

FRILLING.

Mr. E. E. REYNOLDS, of Fair Haven, Vt., sends us a cabinet photograph from which the half-tone reproduction presented herewith was made. In his letter accompanying it, Mr. Reynolds writes that the negative is absolutely untouched, and that the peculiar regular markings apparent in the print are due to a puckering up of the film on the plate. "This is a freak in frilling; it was made on a standard brand of plate and developed on a hot day, no ice being at hand to bring down the temperature of the solutions to the proper point. It came out very artistically



frilled." The perfect uniformity of the design, and the manner in which the design follows the outline of the figure, is very interesting. Of the actual photograph we will say nothing, except that the point of view might have been chosen to show more clearly the fact that a horse is a quadruped. But the print is certainly very interesting as an effect of frilling, and we would suggest that valuable lessons might be learned from this and similar failures.

WE have some exquisite prints made on a new brand of albumen paper recently introduced by our publishers. Its name—Climax—well fits the product, for in brilliancy and general excellence it can hardly be surpassed.

ITEMS OF INTEREST.

A PARIS photographer, M. Dujardin, uses a studio which runs on a circular track, the object being to get any desired light on the subject. The studio is said to be like a railway carriage with glass sides, and is supported on five wheels, one in the center and one at each corner. A much easier method for securing the same result is to use the electric light apparatus with which the frontispiece to the October issue of the BULLETIN was made.

THE British copyright of E. L. Wilson's "Cyclopædic Photography" has been secured by Messrs. Dawbarn & Ward. The book will be on sale in England in a few weeks.

W. B. BOLTON, in the *British Journal of Photography*, gives the following method for making vignetting masks: "A specially constructed printing frame has a rebate cut in the front at a distance of half an inch or more, according to the degree of softness desired, from the printing plane. Into this rebate fits a glass plate, in the center of which is pasted an oval or other shaped mask of opaque paper. I keep a set of these mounted masks of different sizes, each of which I know by its own number, and by this means I am able to prepare vignette glasses of any size, to suit any kind of figure or subject.

"The sensitive film is placed in the printing frame in the ordinary way, and, with mask in position in front, the whole is set upon a rotating table and exposed to light until a sufficient degree of density is secured." Printing-out collodio-chloride or gelatino-chloride plates are recommended, but preference is given to carbon tissue, of which Mr. Bolton remarks, "for exquisite softness no method that I have tried approaches this."

ON November 10th there will be a transit of Mercury over the sun's disc. The next transits will be in 1907 and 1914. The next transit of Venus is in 2004.

MESSRS. CADETT & NEALL, of Ashted, Surrey, England, offer £200 sterling in prizes for an international competition for professional photographers only, the negatives to be taken on plates of their manufacture. Entry forms may be obtained from the BULLETIN.

WRITING on "Chemical Retouching" in the *Photo Gazette*, G. Manschal remarks: "The principle of this method consists in arresting the action of the developer on the parts of the negative which come up too rapidly. For this purpose, as soon as it is apparent that these portions are almost fully developed, the negative is removed from the developer, and allowed to drain a moment, until there is no free liquid on its surface. Then all the portions where the detail is sufficient are painted by means of a camel's-hair brush with a 5 per cent. solution of bromide of potassium. The gelatine absorbs this solution very rapidly, and the places may be gone over several times according as the detail is more or less out. The negative is then returned to the developer and the development continued until the detail comes up in all portions of the negative. The development is nearly or quite arrested wherever the bromide was applied, and these portions do not gain in density. In the end a negative is obtained with detail

throughout. It is not necessary to use extreme care in applying the bromide, for on replacing the negative in the developer there is a diffusion which softens the contours of the portions painted, and it is impossible to notice any trace of them in the finished negative. We have tried the method many times, and always with great success. In an instantaneous landscape where the sky was covered with clouds which ordinarily would have disappeared in development, while trying to obtain detail in the landscape, we have applied the bromide with a rather large brush over all the sky as soon as the clouds were well out. In another case it was a white statue on a background of shrubbery; this time a finer pencil was used to paint the statue, and in another case this method enabled us to preserve a few scattered hairs on the head of a friend, who was extremely grateful to us for it."

WITH the cold weather several little difficulties will bother the photographer. Among these may be an increased difficulty in avoiding air bells during the development of carbon prints. By keeping the water at a temperature not less than 54 degrees Fahr. this trouble may be avoided.

RETOUCHING was never meant to make over an entire new face, but simply to take out defects in the plate, to soften down spots that barely show in the original, to soften lines and wrinkles, but not to obliterate them entirely. The characteristic part of the features should never be removed.

THE Brothers Lumière and A. Seyewitz have been experimenting with a new developing agent, phenylhydroxylamine, prepared a short time ago by Bamberger. This substance crystallizes in silky white needles and slowly dissolves in water. The aqueous solution is slightly alkaline, and will, without any addition, slowly develop an exposed plate. The best results have been obtained with a solution made up after the following formula :

Phenylhydroxylamine.....	10 parts.
Anhydrous sodium sulphite.....	30 "
Potassium bromide	6 "
Water.....	1,000 "

This new developer is said not to possess any particular advantages over those now in common use.

A FEW weeks ago, in Scotland, a photographer was brought before the court, charged, under the Factory Act, with employing after 7 P. M. an office-boy, caretaker, and reception-room attendant. The defence was that the said assistants were engaged in artistic, not manual, labor, and that there was a distinction between persons employed in the studio of a photographer and those working in a factory. The sheriff ruled that a photographer was not necessarily an artist, and held that photographic studios came within the scope of the statute. Fined 5s., and 11s. costs.

THE thirty-ninth exhibition of the Royal Photographic Society of Great Britain is said to have been worthy both of the occasion (it being the first since, by the Queen's command, the prefix "Royal" was added to the title) and of

the Society. Of the twelve medals awarded, two come to New York. Of these latter the *British Journal of Photography* remarks :

"No. 365, 'A Gray Day in the Meadows' (platinum), by R. Eickemeyer. It shows an old homestead in winter, with a snowy foreground broken up by footprints leading up to the house. The gradation is superb ; the picture has been perfectly exposed and printed, while pictorially there is something intensely beautiful and attractive in the theme and the skillful way in which Mr. Eickemeyer has interpreted it. The medal was well deserved.

"No. 462, photo-micrograph, 'Purkinge Cell,' stained by the Golgi method, 190 diameters. Dr. Leaming, of New York, secures a medal for this subject."

SINCE writing our editorial on "Printing from Cracked Negatives," we have noticed a similar method to that therein described in *The British Journal Almanac* for 1893. Mr. Haigh Greenwood recommends printing under a piece of opal glass. He writes : "Providing the film is intact, the negative may be printed in the full blaze of the sun in the ordinary way, and show no crack." The tissue paper we advocated seems to us to be better adapted for this purpose, for opal glass of the proper size is not always at hand ; and, again, the exact amount of diffusion can be obtained by examining the effect under various thicknesses of paper.

JULIUS VERFASSER, writing on originals for the half-tone process, considers that a highly finished print is the best, there being no grain to overcome the fine detail. We have ourselves found this to be the case, and always, where possible, send a burnished "Aristo" print to the engraver. Mr. Verfassser goes on to say that care must be taken in handling prints, or finger marks on the surface will show up in copy. This is, of course, especially the case with gelatino-chloride prints. Collodio-chloride papers may be handled with impunity, and any marks sponged off. The tone recommended is "a good brown, tending somewhat, but not too strongly, towards purple. If too purple, or if of that slaty tone so often seen in gelatino-chloride prints, the relative color values in the half-tone block will be lighter than in the print ; while, if too red, as in an under-toned print, the result will be much darker than it ought to be."

The Practical Photographer for October contains an amusing article from the pen of Mr. G. E. Thompson on "How I Photographed Mr. Gladstone," with a reproduction of the latest portrait of the ex-premier. Messrs. Percy Lund & Co., of Bradford and of Memorial Hall, Ludgate Circus, London, have the sole agency for Great Britain for "The International Annual" for 1895. The "Annual" will be on sale in England on or before December 1st.

ORDERS for "The International Annual" are coming in fast. Order your copy early, as it is not certain that a second edition will be issued. In the volume shortly to be placed on sale will be found matter of the greatest interest to every one engaged in photography. M. Wolfe, Macfarlane Anderson, W. I. Scandlin and C. B. Talbot discuss the photo-reproduction processes ; O. G. Mason, of Bellevue Hospital, and R. J. Hillier, of Stratford Hospital, treat of photography from a medical standpoint ; C. H. Bothamley, Rev. T. Perkins, Le Commandant V. Legros, Colonel Laussedat and others write on architectural pho-



Made with 4x5 Dallmeyer R.R. Lens.



Made with 4x5 Dallmeyer R.R. Lens, with Telephoto Attachment.

THE JUNGFRAU.
(Negatives by D. L. Elmendorf.)

tography and the application of photography to surveying ; J. Traill Taylor gives instructions for making stereoscopic pictures with a single camera ; P. C. Duchochois writes on developers ; John A. Tennant, on the use of rapid plates ; and every process in photography is treated by those who have made it their particular study.

THE following method is suggested for obtaining black tones on collodio-chloride ("Aristo") paper by means of platinum. The paper is printed much darker than usual and well washed, a little ammonia or salt being added to the second wash water. The prints are first toned in a gold bath :

Acetate of soda.....	4 drams.
Chloride of gold.....	15 grains.
Water.....	34 ounces.

The prints are allowed to remain in this bath until they have a bluish tone by transmitted light. They are then rinsed in water and immersed in the platinum bath :

Potassium chloro-platinite.....	15 grains.
Tartaric acid.....	4 drams.
Citric acid.....	77 grains.
Water.....	10 ounces.

As soon as the prints show a pure blue black by transmitted light, they are washed and fixed in hypo, 1 to 10. The deep blue-black tone changes to a pure black in the fixing bath, and the prints have brilliant whites and great depths in the shadows.

THE following formula for making a blue ink for writing on glass is given in *The Druggists' Circular* :

Shellac (bleached).....	15 grams.
Venice turpentine.....	5 "
Oil of turpentine.....	15 "
Indigo (in powder).....	5 "

Mix the shellac, turpentine and oil of turpentine, and place in a water bath; heat gently until solution takes place, and then stir in the indigo.

CELLULOID may be cemented by moistening it with glacial acetic acid and pressing the parts firmly together for a few minutes. Another cement for celluloid is composed of camphor, 1 part ; shellac, 6 parts ; alcohol, 30 parts.

IN *Astronomy and Astro-Physics*, W. L. Elkins gives an account of the instrument for the photographing of meteors, made for the Yale Observatory by Messrs. Warner & Swazey. He writes : "The experiments made at this observatory last year seemed to show that if a sufficiently large field could be covered, it might be possible to secure quite a number of meteor tracks on photographic plates during the August and December showers, at least. The incomparably greater accuracy, as against eye observations, with which these tracks locate the meteor and the radiant has led us to consider the matter worth following up, and accordingly application was made to the National Academy for an appropriation from the Lawrence Smith fund, which is to be devoted to meteoric

researches." With the grant awarded the instrument was purchased. "It is a polar axis of the 'English' form, this seeming to be the most convenient and the best adapted for carrying a number of cameras, and admitting of long exposures without a break. The axis is of tubular form, about 12 feet long, the ends being pivots working in bearings which are adjustable on their supports. The southern support, or base, contains the clockwork; the northern support is a column containing the driving weights, the connection being made by a cord passing under the floor. The declination axis carries arms on either end, which serve as supports for the cameras." Four cameras will be used. Graduated circles and slow-motions for both co-ordinates are provided, and the clockwork has an electric control. The apparatus will be tried on the Perseids this year.

THE best way to observe the transit of Mercury on November 10th will probably be by projecting the sun's image on a white screen. Such a screen may be made of white cardboard and fastened a foot or more back of the eyepiece of the telescope by means of a wire frame. By proper focusing a very sharp image of the sun, from 6 inches to a foot or more in diameter, may be obtained even with a very small telescope or spyglass. The transit will last a little over five hours, beginning at 9.55 A. M. and ending at 3.12 P. M., central time.

THE applications of photography are so many and its value is to-day so well appreciated that it is unnecessary for us to point out that in botany, as in every other science, it may with advantage be pressed into service. The half-



GINGER ROOT (*Asarum Canadensis*).

tone reproduction we present is from a photograph kindly sent to us by Mr. James Shepard, of New Britain, Conn., and gives a capital idea, second only to the actual plant itself, of the ginger root (*Asarum Canadensis*).

All matter for the December issue must reach us on or before November 21st.

OUR AIMS AND END.*

IN a recent letter to a society at which he was invited to lecture, Mr. Holman Hunt wrote as follows :

“Doctrinaires go about laying down dogmas—for instance, that all work should have moral teaching, or that it should have none ; that everything should be minutely finished, or that it should be done as much as possible without exact elaboration ; and that everything should be idealized, or that nothing should be more than real, or different than the accidental fact. This is but a brief enumeration of the laws laid down by theorists, who are all wrong in making hard and fast rules. You will have heard of the different fashions of the day, and you will have seen some of the productions of the new schools. My advice is not to be taken in by any declaration that such a work is in the ‘correct style.’ If a work does not, on sober examination, give you the conviction that Nature in that phase is sweeter or nobler than you thought before, it is not good for you.”

I quote this, as it happens to state a good deal of the creed of the Salon. We claim for ourselves, and welcome in others, lawful liberty of expression, and we do not even object to a little license in a good cause, the cause or end being through the intervention of art as it is in photography, to “give you,” as Mr. Hunt says, “the conviction that Nature in that phase is sweeter or nobler than you thought before” ; “that phase” being the Salon phase, and that ours is an attempt to make photographs represent Nature “sweeter and nobler” than they have hitherto done. Our aim is pictorial effect, and the rigid purism that will allow of only scientific results in photography is thrown to the winds. We don’t care for facts, but we revere truth, and think, with Browning’s painter-monk, that

“If you get simple beauty and naught else,
You get about the best thing God invents.”

Our pictures must be characteristic of the artist to such an extent that those used to the study of photographs shall be able to see the hand of the master in his work. This is not quite accomplished yet, but there are already photographers whose works cannot be mistaken. As the picture dealers say, they are “signed all over.” The camera of the photographer must be no more in evidence than the brush of the painter ; there is no everlasting talk among us of the tools and processes by aid of which our pictures are produced ; a happy thought that can be reproduced by our simple means is more to us than the most profoundly scientific method of not doing it ; a beautiful effect we hold in greater estimation than minute detail. But no one of our exhibitors is asked to follow any particular method. We have been called a one-idea’d school of the fuzzy-type order. Our one ideal is perfection of pictorial photography. So far from being a servile school of one method, there never before was perhaps a body of men of such diversity of means and opinions united so harmoniously for one end.

We differ in other ways than in methods of picture-making, without much mischief being done. We differ in our ideas of the respect due to our art. Some of us think that its results should not be mixed up with its materials, while others contribute some of their work to mixed exhibitions ; but we remember that we are all human, and that the epidemic of pot-hunting still rages. We all claim perfect liberty, but differ in matters of taste.

*Read at the Photographic Salon, October 3, 1894.

We have no little Doctor Johnson among us to dictate his own views, and not leave a word to be said by others. We hold all sorts of opinions. We are a linked ring, with no two links alike ; and if I may presume to use the word "link" in its other sense, each link contributes to one general illumination.

"Not all alike, but all alike informed
With glorious light."

We have an old stager among us who still thinks there is some sense in those principles of art that have aided artists of all time ; we have another (not yet an old stager) who has the utmost contempt for such guidance ; we have one who frankly calls the method of another criminal ; one whose pictures have jog-trotted along at the highest level of exasperating perfection of its kind for many years, partly because without the due balances and checks of imperfection ; another who prefers distortion rather than not be original ; one who rather thinks the lens and camera superfluous ; another who feels naked and ashamed if he has not a battery of objectives with him ; one who can manufacture a pictorial, or perhaps it should be called a process, joke by our truthful art, even to the extent of deceiving a Royal Society ; another whose solid facts are as delightful as a dream ; and yet another who seems inclined to add the advantages of unphotographic methods to our practice ; while I myself prefer, at least for the present, to confine my attention to means only which may be truly called painting by light.

But why go on ? I merely want to show you our toleration and infinite variety. Although we are a united body we have flexibility and range, diverse tastes, many methods, but only one ultimate aim. We are not a one-groove society. We have many grooves running in parallel lines, and the only result of a collision, however violent, is a hand-shake—we never get to broken bones. We are no readers of learned papers on useless modifications of processes that want no modification ; we have no theories except how to get the best effects out of the material supplied to us by the makers. In a word, we begin where the pseudo-scientific photographer leaves off. We no longer care for the science, but devote ourselves to the art of photography. These are our aims ; our end has not yet come, and is, I believe, afar off.

To show how much our institution was wanted, I quote this little extract from a recent number of a photographic paper : "Considering the great strides that have been made in the sciences in this country, it is curious to note the backward state of photography as a picture-making art." It is not in the least curious ; few who take to photography study art at all. When editors and teachers learn that exclusive devotion to science is a chief cause of want of success in picture-making, it may be possible that the art of photography will improve ; at present the photographer is taught, and thinks that his education is finished when he has completely saturated and confused his mind with chemicals and optics. There is nothing essential to the simple manipulatory part of picture-making that an ordinarily intelligent person may not learn perfectly in a few months ; yet many spend their lives over it, and get "no forrader."

We are very grateful, and acknowledge our debt, to those who have improved the means of the art for us, but—we want to get on ! With the exception of the introduction of some printing papers, the little science necessary for picture-

making has stood still for years, and we are satisfied with what we have got. I myself prefer the developer of fifteen years ago, and so do the great majority of practical men. Plates have been made still more sensitive; well, I am sorry for it. There is nothing essential that we now have that we did not possess in 1880, except, as I have said, some printing papers; yet we have suffered and endured a deluge worse than Noah's—of talk.

There were brave men before Agamemnon. There have been pioneers who have left their footsteps on the stands of pictorial photography, but I think it must be apparent that the Salon is setting a higher standard than has been found general hitherto. If I may so put it, the Salon has set up mental over mechanical photography, and the organizers are succeeding in their endeavor to encourage "only that class of work in pictorial photography in which there is distinct evidence of personal artistic feeling and execution." If you should doubt, "look around."

Just another word, and I have done. It may seem a startling statement to those who have not thought over the matter, but I believe we are the only society in the world that confines itself to pure photography, unmingled with other matters. Other societies admit other subjects more or less allied to photography, such as the preparation of the materials; this is no more photography than the color-grinder's craft is painting. Others go still further astray, and allow whoever will, so that he supplies the inevitable "paper" and matter for discussion, to introduce subjects from kindred sciences. All very well in their way, but which should not be read in the name of photography.

We want some clearer definitions; our nomenclature is getting muddled. As I understand the word, and as it was defined by Captain Abney at the last conference of the Camera Club, the word "photography" means painting by light; the word "photograph," a picture produced by the agency of light; and I have lately seen the dreadful word "photogram" defined as "one of the rejected."

The justification for the existence of any new movement may be looked for in the good it accomplishes, and I am bound to say in conclusion that, even if we do no more, we are proud of what we have done. We have shown that in a pot-hunting and commercial age it is possible to hold an exhibition of pure photography without the help of medals or admixture of extraneous matter. We have shown that there is more in the art than mechanical photographers have dreamed of; we have given hints that have been taken by other institutions which have followed our lead as nearly as their means and deference to the prejudices of years would allow, and I have little doubt that the time is coming when, through the movement we have initiated, the opposite poles of our great subject, the science of it and the art, will be completely separated to their mutual benefit, and peace will reign—which is after all, perhaps, a pity, if it be indeed true, that through strife we reach perfection.

H. P. ROBINSON.

"THE International Annual" for 1895 will be ready in November. It is a great book, splendidly illustrated, and indispensable to every photographer. Outdoor and indoor photography, process work, apparatus, and almost every application of photography are treated on by those best qualified to discuss them.

CARE OF THE DUSTING BRUSH.

IN the September BULLETIN is a short account of a device for keeping the dusting brush clean, consisting of two wooden pegs in the broad part of the handle, and a leaden weight at the extremity. Now, that is ingenious, but it must not be supposed that it is the only way to keep the brush clean. I will not attempt to exhaust the catalogue of possible contrivances which human ingenuity might devise for this purpose, but merely describe one of my own. It is not expensive nor difficult to make, nor does it consist of many pieces. Moreover it admits of considerable latitude in the manner of construction. It may be in thickness from one to several millimeters, and of a length to suit the particular dimensions of the darkroom and its contents. In my own case I find $2\frac{1}{2}$ feet to be about right. It holds the brush in a vertical position, with the handle uppermost, thus reducing to a minimum the lodgment of dust. It holds it a few inches above the surface of the table or shelf where the plate-holders are loaded, in a convenient position to be grasped when wanted. After use, it automatically and without farther attention returns the brush to its former position, where one quickly acquires the knack of finding it, even in the dark. One end of this apparatus is attached to the extremity of the handle of the brush; the other is fastened to the edge of a convenient shelf above the table by a pointed piece of metal, commonly known as a tack. In short, the method I would recommend for keeping the dusting brush clean is to—

Hang it up by a string.

A. L. COLTON.

MOUNT HAMILTON, Cal.

A FAIR COUNTRY.

FOR some time past it has been my custom toward the close of each year to make a little journey through a certain country whose salubrious and temperate climate, and whose cheerful and intelligent inhabitants, are particularly agreeable to me, and whose varied and beautiful scenery is celebrated the world over.

At this time, in the neighborhood of my own home, the first signs of approaching winter are both felt and seen. There is a hint of frost in the early morning air, the birds have left us for warmer lands, and the withered flowers and leafless trees speak most eloquently of a dying summer.

But the land to which I go gives no such melancholy impressions to the traveler. It would not be truthful to say that it is always summer there, that there are no changing seasons; but it has always seemed to me to differ from other countries in this, that as one journeys along the highway, he can never tell whether the next turn in the road will bring him a view of an ideal winter scene or a smiling spring or summer landscape. And, paradoxical as it may sound to the stranger, the sojourner in this country neither trembles with cold when he admires the frozen streams and the trees bending to the ground with their burden of clinging snow, nor does he seek the shady side of the way from which to feast his eyes on the cloudless skies and the sunny fields of August.

And the pleasant people I meet there! Nowhere else will you find men and women so frank and kind. So ready always to answer all your questions in detail, and to illustrate any doubtful points; so willing to pause in their various occupations and talk with you, often brilliantly and always as a friend, ready at

once to take you into their confidence, of the romantic views and the sometimes perplexing customs and manners of the country.

Nearly every one owns and uses a camera of some kind, from the smallest kodak to the larger tripod box, and the work they do is always most artistic and interesting. So excellent, indeed, in both composition and finish that I always hesitate to show any of my own photographic attempts, and yet, so just and discriminating is their criticism, and so honest and hearty is their praise, that I cannot at times resist the temptation to open my album for their inspection.

Seldom do I visit this beautiful land by myself. Its many attractions gain an added value when enjoyed in the company of a congenial friend, whose adventure-some tastes and artistic feelings harmonize with one's own, and it is with just such a friend that I propose to start soon on my annual pilgrimage, both of us filled with the most delightful anticipations.

Reader, need I say that this country is found in the pages of "The International Annual of Anthony's Photographic Bulletin."

DUDLEY C. HASBROUCK.

HINTS FOR THE PRINTER.

PRINTERS often complain that prints fix out, turn yellow in the hypo bath, or dry up with a smoky, muddy appearance in the shadows. The paper usually is blamed, but with a little care these troubles may be avoided. One cause of these muddy-looking prints (I am alluding to collodion emulsion papers) is insufficient washing before toning. The prints look brilliant in the toning bath, but, if insufficiently washed, a surface tone only is obtained, and in the hypo they yellow and stay that way. Result, a day's work lost. Another cause is the use of an old hypo bath. Hypo is inexpensive, and by using a fresh bath, one is dealing with a bath of known composition.

Sometimes prints that look all right while wet dry up after mounting with an under-fixed muddy appearance. Using a fresh or too alkaline bath will often produce bleached, hazy-looking prints. I have used American "Aristo" paper successfully for the past four years, and find the "Aristo, Jr.," to be the simplest paper to work among the many brands of printing-out papers on the market. I use a 20 x 24 papier-maché tray, thoroughly cleansing it with plenty of water before using it. Any grease or dirtiness in the tray will produce red streaks. This and finger-marks have caused all the red spots I have thus far seen. Into the tray I pour cold water to a depth of one-quarter of an inch, and place in it not more than three hundred cabinet prints at a time. I press down the prints and then drain off the water. After about five minutes I pour in water, lifting the prints over each other to ensure equal treatment. For the next two washings, rocking of the tray suffices. With "Aristo, Jr.," the prints may be separated in all four washings. To get brilliant prints the acid and free silver must be washed out, and by following the above method this is accomplished. The toning bath I use is made up as follows:

Salt.....	10 grains.
Acetate of soda	$\frac{1}{4}$ ounce.
Water.....	60 ounces.

The gold solution is neutralized with a solution of carbonate of soda.

The bath should be tested with litmus paper, and should test neutral. The best effect is got by allowing this bath to stand six hours before using. When old, add one-third fresh. Sufficient gold should be used to tone the prints in not less than eight minutes. With such a bath any tone from a rich warm to a brilliant blue-black tone may be obtained. I remove the prints a little before the desired tone is reached and place them in a tray containing water, to which has been added a little salt. I cannot recommend the use of acetic acid. Prints treated with this latter have a weak, bleached-out appearance, oftentimes with a bluish halo around the vignette. The hypo bath should test 10 with the hydrometer. Prints fix in such a bath in about twelve minutes. Wash the prints in ten changes of water. There is no need to use a great depth of water. About 6 inches of water in the ordinary tank will suffice. If too much is used the prints curl up at the bottom of the tank and are not properly washed, drying up sometimes with white specks.

After mounting, it is of importance that the prints dry uniformly. A rack for drying prints is easily made. Two uprights and a crosspiece serve as a support for a number of skeleton shelves which permit of a good current of air all round the mount. An electric fan can often be advantageously used when it is desired to rapidly dry the prints.

F. H. DOYLE.

KEEPING QUALITIES OF PHOTOGRAPHIC SOLUTIONS.

FREQUENT contradictory statements have appeared concerning the keeping qualities of the blue print sensitizing bath, stock pyro solution, and other developing reagents, such as hydroquinone and eikonogen. Some affirm that these will not give good results for any length of time after making up, and that to obtain the best results only freshly prepared reagents should be employed. On the other hand, others with equal earnestness state cases in which the finest detail in negative and print has been secured only through the use of old solutions. Still another class of writers has persisted in pointing out, from a purely chemical standpoint, that blue print solutions, even when unmixed, and the ordinary developers, rapidly deteriorate when kept in solution, and soon become worthless. No doubt all these authors and experimenters are honest, both in their work and convictions, yet it is evident, when such varying results are given, that a wide appeal to facts should be made, and that investigators be encouraged, and certain general conditions be established.

Until recently I have held the view that old solutions were unreliable, and, in cases where failures have occurred through their use, have attributed it at once to the age of the solutions, and have promptly thrown them away, without investigating further. My attention was recently called to the investigation of this subject with the results given below.

Two years since, I made up a small quantity of blue print combined solution, mixing it after the usual formula. After using the solution for a few days it was set aside in a cupboard, where it was at times exposed to the light, and the bottle was closed with an ordinary cork stopper. Recently I hunted up the bottle to test the solution. The paper when sensitized was rather blue, but printed rapidly and washed out with high lights white and clear, and shadows of the

darkest blue. In short I have never made more brilliant prints than I obtained with this discolored solution. I now question whether the mixed citrate of iron and potassium ferricyanide will form the insoluble Prussian blue except in strong light.

I next directed my attention to the two-solution developer of hydroquinone and eikonogen made up after Carbutt's formula. This was also two years old. The developer was quite brown, but when mixed with the alkali gave results both in landscape and portrait work which left little to be desired. It was possible to make negatives soft and full of detail, or to obtain a negative full of strength and contrast. It was certainly a better all around developer than one that was freshly prepared. For lantern-slide and transparency work, the old developer seems unexcelled. I finally turned my attention to some bottles that had long since been discarded. They were Beach's pyro, purchased from Watson & Sons in London in 1889. It was used during six months' travel in Europe, then brought home and set aside. The pyro had become somewhat discolored, but developed with strength and rapidity, yielding all the results which could be expected from pyro. In both cases no care was taken to shield these developers from the light, and the bottles were closed only with cork stoppers.

W. M. STINE.

OCTOBER 11, 1894.

NOTE—The blue print sent by Mr. Stine is perfect in every respect. The whites are absolutely clear.—EDS.

Plain Salted Paper.—The following method for preparing plain salted paper appears in *Photographische Chronik*. The plain paper is left floating for about five minutes on the following bath (lukewarm), care being taken to avoid air bubbles :

Sodium chloride (salt).....	8 parts.
Gelatine.....	1 part.
Water.....	450 parts.

The silver bath consists of—

Silver nitrate.....	10 parts.
Citric acid.....	2 “
Water.....	60 “

The silvered paper keeps for about a month, and is treated exactly the same as albumen paper.

Adhesion of Paper to Metals.—For many purposes it is of advantage to firmly secure adhesion between a sheet of paper and a metal support. For example, when framing valuable engravings it is often desirable to back them with a metal plate in order to protect them thoroughly from the influence of the air and moisture. Such a method might also find application in the mounting of photographic prints, a frequent cause of fading being the penetration of injurious gases into the photographic films, such penetration usually coming from the back. The following is an excellent method for producing so firm an adhesion between metal and paper that this latter cannot be removed, even in small pieces. Strong muriatic acid is diluted with an equal volume of water, and a little zinc oxide is added. The metal plate is covered with this mixture,

washed and dried, and coated with a fine carriage varnish. It is then placed in a dry oven and heated for about twenty minutes. The paper to be mounted is laid on the plate thus treated and subjected to a strong uniform pressure in a copying press.

MORE TELE-PHOTO ATTACHMENT.

LAST June a couple of half-tones, accompanied by a few remarks, were exposed in the pages of the BULLETIN, showing the first possibilities of the tele-photo attachment for the 4 x 5 rapid rectilinear.

After thirty-two exposures abroad, under all possible circumstances and conditions of weather and light, and upon subjects of all kinds, I feel disposed to develop the subject a little further. That the lens has done all that it may do I don't venture to assert, but that it did all that I asked of it, and much more, and in every case exceeded my most sanguine hopes, I do assert with a capital A. In the "International Annual" will appear four half-tones, two representing its work on the Alps under most favorable atmospheric conditions, but difficult snow-white subjects, and the other two upon a very fine subject under the worst kind of a smoky atmosphere, viz., St. Paul's Cathedral from Waterloo Bridge. That the results astonished me needs no proof to those who are acquainted with London atmosphere.

The exposure necessary for the tele-photo is only a fractional part of a second longer than for the rapid rectilinear lens itself, using a small stop $f/64$ —in each case.

The actual exposure on the London picture was $\frac{1}{20}$ second, with the lens stop $f/64$, and $\frac{1}{10}$ second, with the tele-photo attached, same stop. The exposures on the mountains were very short, probably $\frac{1}{80}$ to $\frac{1}{100}$ of a second, stop $f/64$.

The half-tones which accompany this article represent the Jungfrau as seen from the Hoheweg at Interlaken,—words are not necessary,—and a view of the Münster at Basle with the 4 x 5 lens, and then a curious gargoyle taken with the attachment from a position 20 or 30 feet to the left of the first, on account of a tree hiding part of the subject.

These last were taken in a drizzle, and only as an experiment, but the negatives proved the experiment to be a good one. Exposures, one-quarter second; stop, $f/64$, and one-half second, same stop, with the tele-photo, and both were over-exposed.

The one thing about the tele-photo negatives that is more remarkable to me than anything else is the wonderful delicacy of the detail, enabling one to obtain perfect lantern slides, the one object I aim at.

One word of warning to those about to use the tele-photo attachment. It must always be focused with the stop that is to be used.

May the owner of a tele-photo enjoy its wonderful properties and develop them still farther than

D. L. ELMENDORF.

Lantern Work.

BECAUSE you do not possess an optical lantern, do not neglect lantern-slide making. Photographic societies exist in nearly every town in the country, and one of the objects of such societies is to provide comparatively expensive pieces

of apparatus at a small expense only to each member. A lantern is considered indispensable by all societies, and you will have the opportunity not only of having your slides exhibited, but of hearing them criticised and of being permitted to criticise the work of others. If there is not a society in your vicinity, organize one. Write to us regarding your wants, and we will endeavor to assist in the formation of such an organization.

The making of lantern slides is excellent practice, besides being a very pleasant occupation for the winter evenings. One cannot without considerable expense make permanent enlargements from every negative, but in the lantern slide is a means of enlarging to an extent far greater than is possible by any other method and at a nominal cost. One's fancy may be indulged with regard to size, color and shape, and valuable lessons may be learned in lighting and composition.

The first slides will probably be made by contact. Special plates are sold for lantern-slide work. These are of thin crystal glass coated with a very slow emulsion. Plenty of red light may be used for this work, though reckless exposing of the plates may result in a slight veiling. This latter is considered by some to be an advantage, but we advise the beginner to avoid any such veiling until he has formed a decided opinion as to what constitutes a perfect slide. The coating is oftentimes so transparent as to be hardly apparent, but by holding the plate down and reflecting the red light, the coated side may readily be distinguished. Contact slides are unsatisfactory because only a certain amount of the negative can be included, the amount being, of course, that which is embraced in the mat subsequently used. Copying in the camera is certainly the most satisfactory way. This may be done either by artificial light or by daylight. Daylight is more satisfactory as regards the duration of exposure, but for uniform results, a constant unchanging artificial light is essential.

Never show a lantern slide until it is properly matted and mounted. The uneven edge and general ragged appearance detract from the beauty of the slide; and, again, it should be remembered that when the slide was made care was taken to include in the space left bare by the mat all of the picture that was desired. The rest had been decided to be unnecessary. At an exhibition last year a magnificent set of slides was shown by a prominent amateur, and at the close of his lecture another worker passed some half dozen or so unmounted slides through the lantern. The slides may have been perfect in every way, but the unsightly margins spoiled them. It is the same with an untrimmed print. The work of the photographer can only be properly judged after he has judiciously applied the knife and given the print a harmonious setting.

THE MOUNTING AND FRAMING OF PRINTS.

WE have in previous issues of the BULLETIN pointed out that the final touches to a picture are of no mean importance, and that as much care is necessary in the selection of mount, frame and title, as in any other parts of the production of the picture. Mr. John Scott, M. B., in the *Journal of the Camera Club*, makes the following pertinent remarks:

"First, then, when we have got our picture we must call it something. Give a dog a bad name and hang him by all means, if you feel so disposed, but you must proceed differently in the case of a picture that you propose to hang.

You must give it a good name, a name that suggests what was in the artist's mind while making the picture, that tells something more than merely what the picture represents, and where the view depicted is to be found.

"Too often a catalogue of an exhibition of pictures with their titles is no less prosaic than an auctioneer's inventory of household goods. It is impossible here to give any suggestions as to actual titles—a line or two from one of the poets often is good. But, whatever the title, it should tell the spectator what to look for in the picture, what the picture was taken for, so that he may, if possible, look at it as the artist himself saw it.

"Then, with regard to mounting. The first question is whether the picture should be mounted at all, or whether it should be framed close up. That, of course, depends much upon the picture; but, generally speaking, small pictures (say less than whole plate) are better for mounting, and large ones are better without.

"The color and texture of the mount depends upon the color and texture of the picture, and upon the effect we intend to produce, for in the different colors and shades which we can use for our mounts we have a great power of altering the effect produced by the picture. For instance, a flat gray picture, weak in contrasts, will look flatter and weaker on a brilliant white mount, while on a dark mount, or with a dark frame close round it, it will gain considerably in vigor of contrast. Sometimes one sees fantastic and eccentric mounts. These are seldom advisable, and, except in the hands of a very few, are dangerous. The ready-made plush mount so often seen is quite suitable for the picture usually seen in it—the highly-glazed portrait, retouched until the complexion is that of a bladder of lard rather than a human face.

"The shape of the mount is a matter of considerable importance, and should vary with the shape of the picture. This is too often neglected, and in every exhibition one sees pictures spoilt by being put on wrong-shaped mounts. A long and narrow picture on a square mount is a glaring but not infrequent example how not to do it. This is one great objection to the ready-made plate-marked and tinted mounts. They lead either to the picture being trimmed to fit the mount, or else to a picture being placed on a mount of a totally different shape. Still they are convenient and save trouble, and though, of course, they are shams, and, as such, to be avoided, it is likely that they will continue to be popular. Brown paper is used by some, and makes a good mount for some sepia-colored pictures; but it should be brown paper of a good quality, and not full of bits of straw as used by some exhibitors, for it is not necessarily artistic to make use of any old rubbish, that the cook or housemaid may have thrown away, for the setting off of our pictures.

"This naturally leads us to the same fashion in picture frames. What possible merit can there be in making frames of old packing cases, rough and unplanned, and perhaps painted over with a bronze paint of some kind or other? There were a lot of more or less good pictures spoilt by such frames at, I think, last year's Photographic Salon. Then, too, these frames are not consistent in their roughness. To be so, the joints should be as rough as the wood. Instead of being nicely mitred, they should be joined by a couple of French nails, or even tied together with a bit of string. But in any case they are silly, and affected, and inartistic, and probably we shall not see many more of them.

"The ideal frame should set off the picture to the best advantage, and not

draw the attention from it to itself. Another function of the frame is to isolate the picture from its surroundings, with which, as well as with the picture, it must be in harmony. From this it is obvious that the same frame will not always be the best for exhibition, also for the walls of an ordinary room. Perhaps the style of frame that best answers both purposes is that largely used by Mr. Hollyer, and familiar to all.

“Of ready-made frames, and even of ready-made mouldings, there are not many that one can use with advantage. As for the blue and white plaster-and-enamel frame, with its pale-blue plush mount; the looking-glass frame, with poppies painted on it, and a hole through which the portrait peers at you, and the many kindred abominations, these are only used by the very amateur, or immature, photographer, and do not concern us here.

“It has often been a source of wonder to me that photographers so seldom make their own frames. They often prepare their own paper; they would scorn the idea of letting anyone else develop or print for them. Some of them even make their own plates; but they are almost all quite content to take their finished picture to a frame-maker, and let him do what he likes with it, and what he very often likes is a flat light oak frame with a sham gold mount for a light gray platinum print. If one gives a frame-maker a design for a frame, it is often difficult to get him to carry out one’s ideas properly, and in any case the cost is considerable, and generally out of all proportion to the work done. There is very much to be gained by making one’s own frames and very little to be said against it. It takes time, but so does the whole practice of photography. The difficulties in the way are but small, and most good photographers have sufficient manipulative dexterity to soon learn what they cannot already do. The tools wanted are but few, and the expense incurred would soon be made good by the saving in the cost of frames, while the advantage of being able to frame one’s own picture as one wishes it to be done is obvious.

“The materials out of which frames should be made are not many in number. For photographs, with the exception of plain or reeded black mouldings, wood is almost the only permissible material. Almost any kind of wood, either in its natural color or stained, can be used. The most useful are pine, oak, ash, and walnut. Occasionally mahogany may be used, but for most photographs the color is undesirable.

“Many kinds of ready-made mouldings are to be had, but only a few are really good. A good moulding may often be got from a builder, one that has been designed by an architect for the interior work of a house; these are generally better than the ordinary run of picture mouldings, they are cheap, and, being made of pine, are easy to work; of course these will require staining. Very complex and ornate mouldings are to be avoided; but an absolutely flat frame, with square edges, and not beveled anywhere, is perhaps worse, though some well-known exhibitors rather affect the style.

“For joints the plain miter is at once the best and the easiest to make; there is no particular advantage in the square mortised joint; it is stronger, of course, but a good miter joint is quite strong enough.

“The question of joints leads me to what I consider a very important point—viz., the width of frame mouldings. This is especially important where there is little or no margin between picture and frame. I have already said that the mounted picture should be of the same shape as the picture alone; that is, that

a long and narrow picture should have a long and narrow mount, that the margins at the ends should be wider than those at the sides. The same holds good with the frame. The picture when framed should be (more or less) the same shape as the picture itself; in a long and narrow picture the end mouldings should be wider than the side mouldings. It will be found in practice that it will not do to make the frame, or mount either, exactly the same shape as the picture in all cases, for in very long and narrow pictures it looks absurd, but there should be some approximation to the same shape. One often sees this principle carried out in mounts, but I have never seen it in frames; and to my mind it is quite as important in the frame as in the mount, except, perhaps, in pictures with a large margin and narrow frame mouldings.

"Take, for instance, a picture 3 inches x $1\frac{1}{2}$ inches; this, if framed close up with, say, 1-inch moulding, would give outside measure of frame $5 \times 3\frac{1}{2}$, which would be not at all the shape of the picture, and would look horrid. If we keep the 1-inch moulding for the sides and widen the ends until the relative proportions of length and breadth are the same as those of the picture, we get $7 \times 3\frac{1}{2}$, the end mouldings, of course, being twice as wide as the side mouldings. That, perhaps, is rather overdoing it; something between the two would be better. But in all cases of long pictures, with little or no margin, there should be some difference between the widths of the ends and of the sides. The miter under these circumstances is, of course, not quite so easy to cut, but there is no real difficulty; it only necessitates a small alteration in the shooting board.

"I am afraid I have been rather discursive on this point, but I have never seen it noticed anywhere, and I am sure that the principle is a sound one.

"There only remains to be considered the color of the frame. If made of dark wood it is generally best to leave it its natural color; if of light wood it usually requires staining. The color, of course, must depend upon the color of the picture, and upon the effect one wishes to produce. Green is a color that seems to be in great favor just now, and if one gets the right green it is as useful a color as any, and will do for almost any photo-picture. The greens, however, that one too often sees are not good; they are too light and sickly. Much of the fashionable green furniture is of this objectionable shade. Then, too, I have seen frames painted a dead and rather light green. I have seen them on our own walls. It may seem presumptuous to say so, but I do not like them (though the mouldings in themselves were particularly charming). I do not like the color, and it seems to me a pity to lose the beauty of the grain of the wood. A frame made of yellow pine, stained a dark brownish green, with or without a line of gold about it, and wax-polished just enough to bring out the grain without making it shine, is a frame that will take almost any picture, and look well almost anywhere. Green stains are not easy to get; the only one I know of is not permanent, but fades badly, so I will not mention its composition; but doubtless some of our chemically learned members can help in this matter.

"I find on reading this over that it all sounds very dogmatic, but that was rendered necessary by what I fear has been a vain effort to be brief. My object has really been not so much to instruct my readers, as to set them thinking on the subject for themselves, instead of trusting so much to others, both for ideas, and also for carrying them out."

HALF-TONE WORK—THE FISH-GLUE PROCESS.

For some time past half-tone etchings have been made on copper instead of zinc plates. The copper plate is not prepared with albumen or asphaltum, but with a light-sensitive mixture called émail (enamel), upon which the negative is copied. The picture is then developed with cold water, heated over a heating apparatus, and finally etched with chloride of iron.

Several methods for making this enamel have been published. The principal ingredient is fish glue, which is much more suitable than ordinary glue. Le Page's liquid glue, No. 20 F., is particularly recommended. To purify this fish glue—a necessary proceeding, if satisfactory results are to be obtained—equal parts of fish glue, water and albumen are thoroughly mixed under constant stirring. This mixture is placed into an enameled cooking pan, of double the capacity, and is heated to the boiling point. After boiling for a minute it is filtered through muslin into a bottle. Using fish glue treated in this manner the light-sensitive mixture is prepared as follows :

Purified fish glue.....	120 c.c.
Albumen.....	60 "
Bichromate of ammonia.....	8 grams.
Water	60 c.c.

About 60 grams of clean glass, broken into small pieces, are placed into a wide-necked bottle, the fish glue is poured in, and then the albumen ; the bichromate is dissolved in the water and added to the mixture. The bottle is now well shaken until its contents have turned into a froth, and is left standing in the dark. The liquid is then carefully filtered and is now ready for use on the plates.

The copper plates, which must be well polished and free from fatty matter, may be matted with dilute nitric acid. They are well rinsed under the tap, drained, and flowed with a part of the sensitive mixture, which is flowed evenly to the four corners ; after draining, each plate is again flowed, but this time the superfluous mixture is removed on a centrifugal machine. Finally the plates are dried by moderate heat.

The exposure in the printing frame varies from a half to one minute in the sun, to two to three minutes in the shade, depending, of course, on the density of the negative and the power of the light. Development is accomplished by simply washing in cold water until the bichromate is entirely removed from the unexposed portions of the plate. Blackening with fatty inks is not necessary, but it is well to pour over the film, three or four times, a mixture of alcohol, 10 parts, and water, 2 parts, to which are added 10 c.c. of chrome alum solution and 1-c.c. glycerine for every 500 c.c. used. This protects the film against cracking during the operation of burning in. The plate is now left to dry in a horizontal position and laid upon a gas stove, where it is heated until the picture turns to a chocolate brown color. For this purpose an iron plate, heated from beneath by a Bunsen burner, may be used. After the copper plate has cooled off it is placed into a porcelain tray and etched in the usual way with chloride of iron solution.

[From *Photo. Mittheilungen.*]**BICHROMATE SOLUTIONS FOR PIGMENT PAPERS.**

For the sensitizing of carbon tissues a 4 per cent. solution of bichromate of potash is usually recommended. Such baths, after repeated use, become contaminated with various substances, sugar, glycerine, etc., dissolved out from the paper, these discoloring the bath, particularly if the latter is exposed to light. Paper sensitized in baths which have become brown does not work as well as paper prepared in fresh solution, and also rapidly deteriorates. Frequently an addition of a few drops of ammonia is recommended. This, however, produces but little effect, for baths containing only a small quantity of ammonia will spoil in a time proportionate to the amount of ammonia added. The addition, however, of a larger amount of ammonia is strongly recommended, sufficient being added to change completely the potassium bichromate into the neutral salt, a change that is complete when the color of the solution changes from an orange red to a straw yellow. A small excess of ammonia, sufficient to impart a slight odor to the solution, will do no harm, but a large excess should always be avoided or the gelatine film of the pigment paper may be loosened. Baths prepared as above, with ammonia, can be used for a long time without spoiling, and are therefore considerably cheaper than the ordinary bath. In most formulas for such baths only a very little ammonia is usually used, but a larger quantity, especially if an alcoholic bath is used, as in warm weather, is desirable.

A further advantage derived from the addition of ammonia is that pigment papers sensitized therewith do not spoil, even if the drying is much prolonged. Papers sensitized in the ordinary bath are often useless if the drying occupies more than twelve hours, but paper prepared with a bath to which ammonia has been added was perfectly good for use though twenty hours were required to dry it properly.

H. VOGEL.

—♦—

**A NOVEL AND INVISIBLE KIND OF TRANSPARENCY.
—MAGIC MIRRORS.**

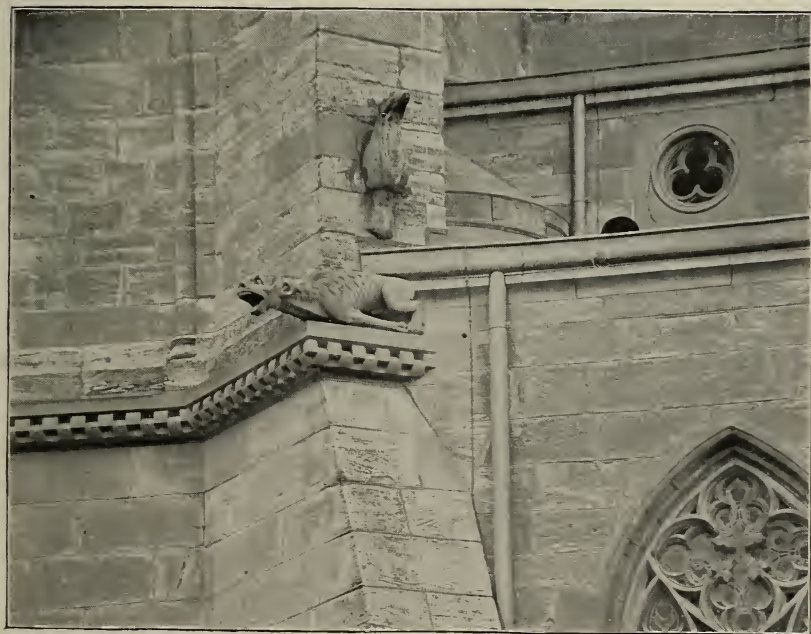
IN an editorial under the above title, in the *British Journal of Photography*, directions are given for securing a picture which, while the support is dry, is quite invisible, becoming apparent only when this latter is moistened with water. The process is based on the fact that certain organic substances, as gelatine, starch or gum, when exposed to light along with such bichromates as those of ammonia or potash, become insoluble. This particular application of this phenomenon, it is said, was evolved from the early experiments of Poitevin by a literary gentleman, Mr. Stone. The procedure is as follows:

“Immerse a good quality of paper in a solution of soluble gelatine, 20 grains per ounce of water. Let this get absorbed into the paper, which then hang up to dry. When quite dry, float it for three or four minutes on a solution of bichromate of potash, made up in the proportion of 1 part of a saturated solution diluted with 2 parts of water. After being dried, the paper is ready for use, and it seems to keep well for a considerable period of time.

“It is exposed in a printing frame under the negative until a brownish-colored print appears visible, after which it is immersed in water until the unaltered bichromate is dissolved out. ♦



Made with 4x5 Dallmeyer R.R. Lens.



Made with 4x5 Dallmeyer R.R. Lens, with Telephoto Attachment.

THE MÜNSTER, BASLE.
(Negatives by D. L. Elmendorf.)

"When this has taken place, the next step is to remove the gelatine which has remained unaltered by the exposure, and which is still more or less soluble. This is done by treatment with warm water.

"If the picture be now examined, it will be found to be but feebly visible and of a pale brown color. It is evident that, to render it invisible, this color must be discharged. Happily, this can be readily done by immersing the print in sulphurous acid, or in sulphuric acid diluted with an equal volume of water.

"Under this treatment the visible image disappears so far as concerns its aspect by visual examination, although it is still existent in the paper. When washed, to remove the bleaching acid, and dried, the picture is finished. It can now neither be seen by being looked upon or through.

"When desired to be rendered visible, all that is requisite is its immersion for a few seconds in the hydroxyl monohydride of the *fin-de-siècle* chemist, the *aqua pura* of the pedant, or the common, plain water of the unsophisticated speaker of English. Held up to the light, the transparency appears with a vigor proportionate to the nature and density of the paper upon which the print was made, for much, very much, depends upon the paper. Within the past fortnight we have obtained a sample of hard, dense, absorbent blotting-paper, which, to our thinking, proves better for the purpose than any other brand we have tried. An opaque paper, when examined by transmitted light and which becomes very translucent when made wet, is the best.

"We have rendered plain writing-paper really excellent for this purpose by first removing the size with which it was prepared by a preliminary treatment with hydrochloric acid when laid flat on a glass plate or in the bottom of a flat dish. It need scarcely be said that this treatment weakens the paper very much. A weaker sizing with gelatine may advantageously follow in some cases.

"The *rationale* of the process will be apparent. By the treatment specified, certain portions of the paper are heavily charged with insoluble gelatine, and these act in contradistinction to the more absorbent portions, which become semi-transparent on immersion in water, and remain so until the water is dried up, when the differences in translucency disappear."

The following methods are given in *Photography* for the production of so-called magic mirrors: "One method of producing these pictures is based on the carbon process. If the negative to be printed be rather a dense one, tissue of the ordinary transparency kind may be chosen, and one less loaded with coloring matter; if the negative be weaker in character, the bichromate bath should not exceed the strength of 5 per cent. The tissue is immersed for a short time in the solution, squeegeed off, dried quickly, and used speedily. It is exposed as usual beneath a negative, and then coated with a collodion composed of 5 grains pyroxyline dissolved in an ounce of a mixture of equal parts of methylated spirits and methylated ether, and allowed to partially dry. A clean glass (preferably plate glass) is then taken and coated with the same, and washed in clean water until the greasiness has disappeared, when it is ready to receive the tissue. That may now be plunged into the water and left for a minute or so, but not until it begins to curl outwards; when ready, it is lifted out of the water, squeegeed in the usual way, covered with two or three layers of blotting paper, and placed under a weight for an hour or two, after which the glass is taken, placed in boiling soda water, then the tissue is pulled away from the layer of collodion and placed to dry. When the plate has become quite dry its surface will have a

glossy appearance, which will not exhibit any peculiarity until it is breathed on, when it will be found that the picture will appear, possessing all the delicate detail of the original. The important points to remember are, first, that the layer of collodion should not be too horny and dried; second, that the tissue should not be allowed to absorb much water."

Another method, not a photographic one, is the following: "Take some fluor spar and dissolve in sulphuric acid; when dissolved sufficiently to flow easily in a quill pen, trace the required design or picture upon a piece of glass which has been cleaned thoroughly and dried. Leave it for a short time, say, five or ten minutes (if the acid is left too long the drawing will be visible on the dry glass; a few trials will determine the length of time the acid should be allowed to remain upon the glass). Wash the glass with water and dry perfectly. As soon as the glass is dry the picture will appear whenever the glass is breathed upon."

SHUTTERS—AN IMPORTANT DECISION.

THE suit which E. & H. T. Anthony & Co. brought against George Murphy for selling shutters manufactured by George F. Green, of Kalamazoo, has been decided in favor of Messrs. Anthony & Co. and an injunction issued. This suit was for infringement of the Cadett and Packard patents, which are owned by Messrs. Anthony. It has been in the courts for some years and has been a very expensive litigation. The Anthonys originally had a license under the Cadett patent, but as the royalties they paid were so large, they thought it would be wiser to buy it. They did so and have owned it for some years. Though it has expired, damages for infringement of this patent are still collectible, and the Court decided that the Packard and Cadett patents were capable of conjoint as well as separate use. To make the matter more clear, we append a copy of the decision:

UNITED STATES CIRCUIT COURT, DISTRICT OF NEW JERSEY.

E. & H. T. ANTHONY *et al.*

VS.

GEORGE MURPHY.

EDMUND WETMORE, for Complainants.

E. S. Roos, for Defendant.

GREEN, J.:

The bill of complaint in this cause charges the infringement by the defendant of two certain patents owned by the complainants, one of which was granted to James W. T. Cadett, October 15, 1878, for "new and improved pneumatic arrangements for facilitating the uncapping or exposing, and capping or shutting, the lenses used in apparatus for depicting persons or objects by photographic means," and is numbered 208,956; the other was granted to Cullen C. Packard, April 28, 1885, for "new and useful improvements in photographic

shutters," and is numbered 316,564. Both of these patents have been assigned to the complainants.

The defendant is a dealer in photographic supplies, resident in the State of New Jersey. The "photographic shutters" sold by him and charged to be infringements were actually manufactured by one George F. Green in Kalamazoo, Mich., and he has virtually assumed the burden of the defence.

The answer filed by the defendant not only denies infringement and that the two patents are capable of joint use, but, as well, that neither Cadett nor Packard was the first inventor of the peculiar mechanism and shutter shown and described in the respective Letters Patent, and asserts boldly that, in fact, the said George F. Green, the manufacturer of the alleged infringing mechanism and shutters, was the first inventor thereof, and that to him, and to him alone, belonged the right to claim the honor of the invention.

So far as the first two defences are concerned, they may be readily dealt with. It seems quite certainly established by the proofs in the cause that the two inventions are capable of and are fully adapted to conjoint as well as separate use, and that they may be and are conjointly and beneficially used in connection with and as parts of one and the same photographic apparatus, and that as a matter of fact they are so conjointly made use of, and are to be found in the "shutter mechanism" admittedly manufactured by Mr. Green and sold by the defendant. And this fact disposes of the defence of non-infringement as well. For, if the different mechanisms thus embodied in the defendant's shutter and appliances are practically the identical mechanisms of the Cadett and Packard Letters Patent, or the equivalent thereof—and of this there seems to be no reasonable doubt—of necessity the defendant is guilty of infringing; provided, always, Cadett and Packard are, in fact, the first and original inventors of those mechanisms. This proviso, however, raises the main issue in this cause: To which of the contending parties is the honor of "inventor" to be awarded—to Cadett and to Packard or to Green?

Upon the issue thus presented the contest has been most strenuously waged. It is one wholly of fact, and to sustain their respective contentions witness after witness has been produced by the one party or the other, who have, under the solemn obligation of an oath, made statements touching these inventions, and the matters and events connected therewith, which are badly contradictory and wholly irreconcilable. These witnesses, or many of them, at least, are apparently disinterested and unprejudiced. Necessarily their testimony obscures the issue, and renders a satisfactory and conclusive finding exceedingly difficult.

After a careful consideration of all the testimony in the cause, documentary as well as oral, and without lumbering up this opinion with citations therefrom, a fair presentation of which, if made at all, would demand the rescript of nearly all the evidence, and after weighing the conflicting statements of many of the witnesses as best could be done, the following conclusions have been reached:

First.—As to the Cadett invention, it is established that it was novel and highly useful, and was the first of that character, in connection with photographic instruments, made in this country, at least. That Cadett, in this respect, appears to have preceded Green in any similar invention which he may have made; and if not strictly a pioneer, yet he seems to have been the first to bring into useful and workable combination the various elements of his mechanism, and is entitled to due credit therefor. That the alleged anticipating

shutter and mechanism of Mr. Green, if it be admitted to have prior existence at all, amounted to nothing more than an experiment, which failed to give satisfaction at its only practical test, and was admittedly never brought to a "state of completeness," but was abandoned. That the defendant's mechanism embodies the Cadett invention, and comes within the scope of the claim of the Letters Patent, even if that be restricted as straightly as contended for.

As to the Packard patent, the weight of testimony shows that as early as July, 1884, Packard had a photographic shutter of its peculiar type completed and in successful use. That early in August of the same year he made certain improvements upon this shutter mechanism, and produced the shutter as it now is in use. That he promptly applied for Letters Patent for his improved invention, which were granted to him in the following April. The presumption arising from this grant weighs heavily in his favor. The weight of the oral testimony seems to indicate him as the real and first inventor of these improved photographic shutter contrivances. The documentary evidence strongly supplements and strengthens the oral, and the conclusion seems inevitable that as between Packard and Green, Packard was in fact the real inventor.

It is quite probable that this conclusion would have been reached had the testimony been more evenly balanced. To overcome the presumption arising in favor of Packard from the grant to him of Letters Patent by allegations of fraud and dishonesty, proof of the most conclusive nature is demanded. A defense of this kind shifts, necessarily, the burden of proof and casts it upon the defendant. That burden must be triumphantly borne. The preponderance of testimony to sustain it must be clearly apparent. If all reasonable doubt be not dissipated by it, the defence fails, for such doubt as remains must be resolved against it. Without making any special criticism upon the story of his alleged invention, as related by the defendant, it can hardly be contended that it is so consistent, so natural, as to dissipate all doubt. The very existence of some doubt is fatal to the cause of the defendant.

There must be a decree for the complainants.

CLEMONS' DOUBLE HEAVY SALTED PAPER.

AN improved matt-surface paper, manufactured by the veteran John R. Clemons, should be tried by all our readers who like sepia or black matt-surface prints. This new paper is a double-coated salted paper, and has in our hands yielded most wonderful results. Mr. Clemons recommends a chloride of aluminum and gold toning bath, of which he writes: "It will tone any print made with silver that ever saw the light of day." The paper will keep indefinitely while unsensitized, and, after sensitizing, will retain its printing capacity for a long time, if properly stored. The aluminum gold toning bath is prepared as follows: A stock solution is made up, consisting of—

Aluminum chloride	80 grains.
Bicarbonate of soda	360 "
Water	48 ounces.

During the making of this solution a flocky white precipitate will settle at the bottom of the vessel. The solution is filtered through clean-washed muslin. To prepare a small bath for toning, some 10 to 12 ounces of the above stock solution are taken, and sufficient chloride of gold added to tone in eight to ten minutes. The gold solution must be neutralized with bicarbonate of soda be-

fore adding it to the above bath. When the prints reach the tone desired, they are immersed in a bath of salt water—water, 1 gallon, and salt, 1 ounce. This arrests further toning. Fix as usual.

Photo-engravers will find this paper much superior to the old Clemons' matt-surface paper. It is made by a new process, which, Mr. Clemons states, gives a product free from the troubles found in other plain salted papers. This paper must not be confounded with the old salted paper, often advertised as Clemons' new salted paper.

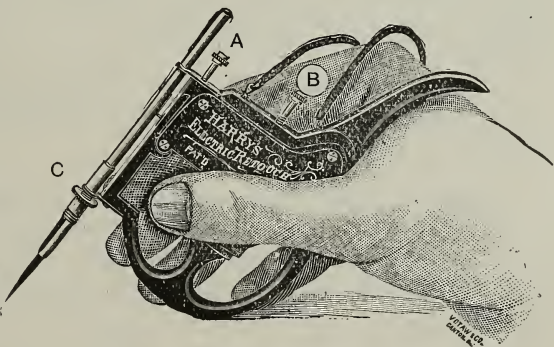
OUR ILLUSTRATION.

ARISTO-PLATINO, BY S. L. STEIN.

IN the October issue of the BULLETIN we published the directions for using the new paper, "Aristo-Platino," made by the American Aristotype Company. With this issue we present an actual print on this paper, the negatives and prints being made by S. L. Stein, of Chicago and Milwaukee. Mr. Stein needs no praise from us. His work is known the country over, and the excellent prints he sends us speak louder and with more effect than any words of ours. We congratulate ourselves and our readers, first, on the excellent series of negatives used, and, secondly, on the exquisite prints obtained on the new paper. There seems but little doubt as to the future of this new printing-out paper. The most prominent photographers in the country realize its worth and are putting it in as a distinct improvement over everything else.

RETOUCHING BY ELECTRICITY.

THERE have been, and are, many devices for aiding the retoucher, but none that we have seen equals in efficiency that shown in the accompanying cut, and known as Harry's improved electric retouching device. This is not a plaything, but a practical instrument, scientifically constructed, and made so substantially that it will last a lifetime, if properly handled. The motive power is furnished by a battery of special construction, which costs only about \$1 a year to keep it in perfect order. The retouching device makes over 2,000 strokes per minute, and will deposit the lead as rapidly as one can direct the pencil point. In learning to retouch, the touch is the most difficult thing to acquire; this is furnished by the device. The retoucher has but to guide the retouching device, which will do the work as fast as it can be guided. There is no danger of making holes through the film, and the necessity for continually sharpening the pencil is done away with. With a few hours' practice the use of the instrument may be mastered, and retouching, either smooth or the finest stipple, becomes a pleasant occupation rather than an arduous task. As a great labor-saver we commend it to our readers.



SOCIETIES.

BUFFALO AMATEUR PHOTOGRAPHERS' EXCURSION.—Last July, Mr. David Tucker, the well-known photo-stock merchant of Buffalo, arranged an excursion for the amateur photographers of the vicinity. The event was in every way a success, great interest being manifested in the competition for the many valuable prizes offered. These included some \$100 worth of plates and sensitized paper, several cameras, and other goods, offered by various manufacturers. Mr. Tucker offered for competition a 4 x 5 Optimus lens, valued at \$35.

These prizes were divided into three classes, and the following awards have been made: First class—C. L. Beer, 1st; C. W. Maneer, 2d; J. Stein, 3d; W. H. Lyman, 4th; L. V. Stevens, 5th; B. B. Daggett, 6th; B. F. Marshlow, 7th; J. P. Zenner, 8th; H. Timmins, 9th; L. V. Cock, 10th; J. R. Way, 11th; W. H. Miner, 12th. First prizes on plates to J. H. Alford, F. W. Joyce, and M. C. Provoost.

The lenses, five in number, will be awarded about the first of next July. Some fifty or sixty amateurs took part in the competition.

EALING (ENG.) PHOTOGRAPHIC SOCIETY.—An exhibition will be held on November 21st and 22d, at the Prince's Hall, Public Buildings, Ealing. All exhibits must reach the hall on or before November 19th. The whole of the work of the production of the picture, except retouching, mounting and framing, must be the sole work of the exhibitor. Entry forms may be obtained from the BULLETIN.

CALIFORNIA CAMERA CLUB.—At the urgent request of many contributors to the print exhibition, the opening of the same was postponed until October 22d.

SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.—At the November meeting Mr. Murray will read a paper on "Optics." Mr. D. L. Elmendorf will give an exhibition of lantern-slides before the Society on December 14th. Subject: "The Land of Shakespeare."

UNIVERSITY OF PENNSYLVANIA CAMERA CLUB.—Officers: President, Craig Atmore; Vice-President, George B. Bains, 3d; Treasurer, George A. Grevemeyer; Secretary, C. Russell Hinchman.

LAWRENCE CAMERA CLUB.—Regular monthly meeting held on October 3d. One new member elected. It was decided to hold an exhibition in December. The meetings of this Club are held on the first Wednesday in each month. The Club numbers some thirty to forty members, and has ample accommodation in Central block.

SPRINGFIELD CAMERA CLUB.—The eighth annual meeting was held on Tuesday evening, October 16th. Reports from the officers showed the Club to be in a prosperous condition. The following officers were elected: President, Henry C. Haile; Treasurer, William M. Lester; Secretary, Charles C. McElwain; Librarian, W. B. Sleight. The Club has decided to take new rooms, a studio, parlor and reading-room and a darkroom in the Young Men's Christian Association Building. These will be ready for occupancy about January 1st.

ONEIDA CAMERA CLUB.—The first prize contest of this organization closed

October 18th with a public exhibition. The prize winners were Albert Dygert, first; E. T. Seeley, second; E. B. Noble, third. Honorable mention: F. D. Harris, W. P. Bacon, G. R. Hanson, F. Ryker, E. Park and R. Hill. The judges were Dr. and Mrs. C. H. Perry. The cosy rooms of the Club in the Post-Office building were crowded with spectators. The stereoscopic pictures of Mr. F. Ryker were particularly admired. At a special meeting of the Club it was decided to hold another contest in January.

BOSTON CAMERA CLUB.—Classes in dry-plate development, lantern-slide making and portraiture have been started by this Club, and instruction in enlarging, printing methods and photo-micrography is contemplated. Competent volunteer instructors will conduct these classes.

THE ELIZABETH CAMERA CLUB.—The regular monthly meeting of the Club was held October 16th, President Blackford in the chair. The advisability of giving a public lecture, illustrated with lantern slides, for one of the charitable institutions, was fully discussed. The Committee was appointed to make arrangements for such an exhibition, to be held the latter part of November. The meeting then adjourned and looked at some very interesting slides. A prize has been offered to the member sending the best set of ten slides. The Picture Committee's call for photographs for the walls of the club-room met with prompt response, and the rooms now look very inviting and cheerful. The purchase of a reducing camera has opened up a new field of work, namely, the making of lantern slides by reduction instead of by contact, as formerly was necessary.

THE MYSTIC CAMERA CLUB.—This Club has charge of the lantern slide exchange for the coming season, and has its new set of slides with a lecture entitled, "The Coast of the Old Bay State," all ready for shipment November 1st. During the past year some very substantial improvements have been made in the club-rooms and in the apparatus available, and many new members have joined. Several outings have been held, among the most enjoyable of which was that on Labor Day, when the New England Lantern Slide Exchange were guests of the Club, enjoying a barge ride to various historic points in Medford and vicinity in the morning, and riding through Middlesex Falls in the afternoon.

THE ALBANY CAMERA CLUB.—The regular meeting of this Club was held October 5th. An amendment to the constitution was carried, reading, "Any associate member who has paid his dues as such for one year shall be transferred to active membership, at his request, by a vote of two-thirds of the Board of Directors and upon the payment of an additional fee of \$5." The prize pictures of Mr. Pirie MacDonald, which won such fame for their general excellence at the recent St. Louis exhibition, were, at the request of the Club, on exhibition. It is needless to say that the sentiment of all present coincided with that of the judges at St. Louis. They were very much admired, especially for their original style and for the absence of conventionality in them and the splendid effects of light and shade. A resolution was passed, thanking Mr. MacDonald for his kindness in exhibiting his pictures, and also that the Club was honored by having in its midst so honored and distinguished a member. The meeting then adjourned to meet again the first Friday in November, when it is expected that the Committee on Outing will report.

CENTRAL CAMERA CLUB (Brooklyn Y. M. C. A.).—The fall and winter season of meetings of this Society opened on September 27th with a very large attendance of members. As this was the first meeting since July, vacation experiences were the topic of the evening. Many fine negatives and prints of all parts of the country were shown, of which President Lowery's "Point of Wood" views, Mr. Johnson's "Quebec and Thousand Islands" scenes, and Messrs. Braillard and Burger's "Shawangunk Mountain" pictures, deserve special mention.

The former plan of the Club to have a lantern-slide exhibition at the first meeting, and a demonstration the second meeting, of each month, was again adopted.

At the next meeting, October 11th, a practical demonstration was given by Mr. F. F. Braillard, Jr., "How to Run an Oxy-Hydrogen Lantern." This demonstration proved very interesting and instructive. Mr. Braillard, Jr., first described the optical lantern in detail, and then showed the members how to connect with the tanks, arrange the jets, regulate the gas, etc. At the close of the demonstration several members were asked to try for themselves the putting-up and running of the lantern, and with a little practice found themselves capable of running the same.

The evening closed with an exhibition of slides, the work of the members, which was appreciated by all.

Many interesting lantern slide evenings and demonstrations are being arranged by the Committee, and will be announced from time to time.

WITH deepest regret we note the death of one of our oldest workers, Prof. Charles Ehrmann, who died on Tuesday, October 23d, at his home in New York City. He was born in Germany in 1821, and devoted most of his life to the study of photography. He leaves three sons.

PHOTOGRAPHERS' ASSOCIATION OF MISSOURI.

FIRST Annual Convention, held at Macon, Mo., October 16-17, 1894. The Convention was called to order by the President, W. E. Nottingham, at 11 A.M., Tuesday. Mayor A. E. Hanson, on behalf of the city, briefly welcomed the photographers, thanking them for the honor done to Macon, and expressing surprise and gratification at the wonderful display of art which they had brought with them. He spoke of photography as one of the greatest inventions, and traced its progress towards perfection in an interesting manner, closing by extending the freedom of the city to the Association.

There were forty-two members present. President W. E. Nottingham followed on behalf of the Reception Committee in welcoming their guests, and eloquently referred to their art's progress. He stated his hopes and wishes for the future of the Association, and told how gratified he felt to see so many present.

The minutes of the former meeting were read by the Secretary and approved by the meeting. A committee of five was appointed to nominate officers for the ensuing year. The Committee consisted of Mr. W. H. H. Clark, St. Louis; J. W. Tinsman, Kirksville; S. C. Burgess, Moberly; Mrs. Ella Guerin, St. Louis, and J. H. Nichols, of Macon, to report at next morning session. A committee

of three judges, appointed to grade exhibits in the "Cabinet Photo Competition," was appointed in the following manner: One by vote, one by the President, and the two thus appointed to select a third. Judges were J. A. Nickell, Marceline; C. C. Roberts, Stewartsville, and S. C. Burgess, of Moberly.

Upon motion, the Convention adjourned until 2 p. m.

FIRST DAY.—SECOND SESSION.

Meeting called to order at 2 p. m. Mr. W. H. H. Clark spoke on "Photo Associations." Upon motion, a committee of five was appointed to go over the Constitution and By-Laws, and revise where necessary. Upon motion, Committee was increased to seven, as follows: F. W. Guerin, St. Louis; F. L. Hammer, St. Louis; Edwin Thomas, Bevier; Thomas Stout, Unionville; A. Dunlap, Chillicothe; and for the manufacturers and dealers, Mr. George T. Bassett and Mr. N. A. Corning, St. Louis. Chillicothe, Mo., was unanimously chosen as the place of holding the next meeting. Communications were read from J. C. Strauss, St. Louis, and J. Ed. Rösch, St. Louis, in which those gentlemen deeply deplored the fact that they were unable to attend, but assured the members that they were heartily in favor of the Association and wished "long life and great success to it."

On motion, a vote of thanks was tendered Mayor Hanson for his kind words and hospitable address, and the Secretary was instructed to present a letter to the gentleman to that effect.

Mr. A. Dunlap read a paper on "Harmony." A vote of thanks was tendered Mr. Dunlap for one of the best papers ever read before a convention. Paper ordered printed.

Mr. Clark, St. Louis, made a few well-chosen remarks on "Square-in-the-Face Lighting," and was followed by Messrs. Guerin, Bassett, H. Tomlinson and F. L. Hammer on timely and practical subjects. Mr. A. Dunlap advocated the formation of a "Photo Exchange Club." No action taken. Mr. F. L. Hammer proposed grouping together the best pictures of the Convention and photographing the whole. This brought out some discussion, as some of the exhibitors claimed that most of their pictures were copyrighted, therefore could not be photographed. No action taken. On motion, adjourned until next morning.

SECOND DAY.—MORNING SESSION.

Meeting called to order by President. More members had arrived during the night and were present at this meeting. Committee on Constitution and By-Laws reported that they had seen fit to make an additional section to Article II of the Constitution, as follows: "Any member who is in any way connected with the manufacture of photographic materials, or any dealer in photographic supplies, or any publisher of a photo journal, or who is in any way connected with the publication of the same, shall be allowed to take part in discussions, etc., but shall not be allowed to vote, to serve on committees, or to hold office in this Association." This was ratified and adopted by the Association, and went into effect at once. It will be known as Section 2, of Article II, of Constitution.

This does not apply to those now on committees, or who were appointed before the adoption of Section 2d, Art. II, until committees are discharged.

Committee asked for more time to more fully examine the Constitution and By-Laws. Time was granted until next Convention. Committee on nomination of officers reported as follows: For President, F. W. Guerin, St. Louis;

First Vice-President, F. L. Hammer, St. Louis ; Second Vice-President, Geo. Herman, Memphis ; Secretary, A. Dunlap, Chillicothe ; Treasurer, H. Tomlinson, Hannibal.

After some discussion, it was decided that Mr. Guerin was ineligible under the amendment to Constitution just gone into effect. Mr. Guerin withdrew.

Mr. F. L. Hammer placed in nomination, and, on ballot being cast, Mr. Hammer was elected President. Being called upon, Mr. Hammer responded with a happy speech, thanking them for the honor done him.

Mr. Thomas Stout, of Unionville, was nominated for First Vice-President. On motion, nominations closed, and Mr. Stout elected by acclamation. Mr. Stout unanimously elected.

The rest of the Nominating Committee's suggestions were accepted unanimously.

Time of next meeting was left to the direction of the Executive Committee. Those members of the Association who originated the society were given a vote of thanks of the Association. Mr. Dunlap again brought up his plan of establishing an exchange club. Mr. Bassett spoke on same subject. Mr. Hammer moved that a committee be appointed to investigate and perfect an arrangement for establishing the same. Carried. Committee as follows : Messrs. Dunlap, Hammer and Tomlinson. Was resolved that the exhibits of photographers, and as many of the pictures of other exhibits as owners will allow, be photographed. On motion, adjourned.

AFTERNOON SESSION.—SECOND DAY.

Mr. R. Goebel, of St. Charles, addressed the Convention, and pointed out the difference between photography as practiced now and as practiced forty years ago, as he remembered it. By request, Mr. Goebel entertained the Convention with one of his funny stories, which was much appreciated.

A vote of thanks was extended to retiring officers. The Association extended their sincere thanks to the people of Macon for their kind hospitality and favors shown. Committee on "Photo-Exchange Club" reported as follows : This club to be known as the "Photo-Exchange Club" and to form a part of the Association. Its object shall be to advance photography among its members and encourage them to better work by showing examples of each member's work to be criticised and studied for points and ideas. Any voting member of the Association may join. Each member, upon joining, sends six cabinet photos—his own work—to the Secretary of the Club. The Secretary sends the six pictures to the first member on the list of the Club, who keeps them six days, studies them for points, and at the end of that time writes his criticisms in a blank book attached to the pictures, and forwards to the next member, whose name is furnished him by the Secretary, the second man forwards them to the third, he to the fourth, and so on, until the pictures complete the circuit. Supposing there were twenty members in the Club, each member receives six pictures every week and makes six pictures for the Club only every twenty weeks. The Club was organized with fifteen members.

The Association extended a unanimous vote of thanks to the publishers and editors of photo journals who had printed matter pertaining to the Association.

On motion adjourned until 1895.

Thus ended one of the best, most instructive and harmonious First conven-

tions ever held. It was everything claimed for it, and proved a "winner and a record-breaker," just as advertised.

THE Cramer Dry Plate Company had a fine exhibit which was much admired. Mr. George F. Bassett had charge. Mr. and Mrs. F. Ernest Cramer were in attendance.

THE Seed Dry Plate Company was represented by Mr. A. E. Atwater, and made a very large exhibit.

THE Hammer Dry Plate Company showed a large and elegant exhibit of photos made on the Hammer plate. Mr. S. Hutchins in charge.

MR. J. HORGAN, Jr., represented the American Aristotype Company, and showed choice specimens on their new "Aristo-Platino," and "Aristo Jr.," and made demonstrations with their combined bath.

J. ED. RÖSCH, St. Louis, exhibited some superior work made at night with the Anthony electric light apparatus.

THE exhibitors deserved and received much credit for making such beautiful displays, and helping to make the Convention just that much more successful.

THE Cabinet Competition display brought out some nice work along with no little "every day work."

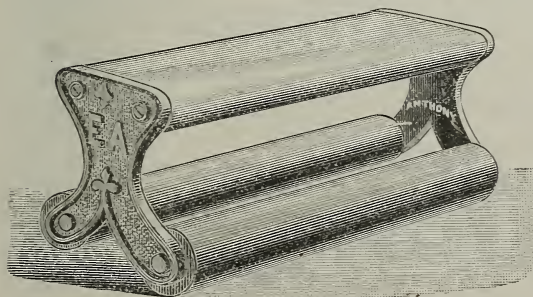
THE phenomenal success of the First Annual, and the wide-awake officers that have just been elected, warrants the belief that next year will see the Photographers' Association of Missouri at the head of the list.

EDWIN THOMAS, *Secretary*.

THE BULLETIN extends its hearty congratulations to Mr. and Mrs. William Henry Robey on the occasion of their silver wedding, which occurred October 31st. Mr. Robey is a member of the well-known firm of Horgan, Robey & Company, Boston.

IMPROVEMENT IN APPARATUS.

FOR the proper mounting of prints a good print-mounter is essential. Often-



times considerable pressure is applied, and a strong, thoroughly reliable instrument is wanted for the work. The Success print-mounter which has long been the favorite, has recently been considerably improved. The accompanying cut gives a good idea of its general appearance. The

rollers are made of the finest velvet rubber, the metal-work is strong and is nicked, and the handle is of a shape suitable for proper gripping. The price remains the same as heretofore, \$1.

BOOKS RECEIVED.

GENRE STUDIES, by D. R. Coover; published by E. & H. T. Anthony & Co. A collection of photo-reproductions of many of Coover's famous studies, including "The Little Truant," "Spare us! O Lord," "War," "Peace," "Light," "Messenger of Love," "Diana," "Aurora," "Chivalry," "The Spider Web," and others. The methods adopted in producing the various effects are tersely and lucidly described. Price, \$1.50.

PHOTOGRAPHISCHE CHEMIE, von R. Ed. Liesegang, Düsseldorf. The writer of this interesting manual is the son of the well-known editor of *Photographisches Archiv*, and deserves great credit for his efforts in offering to the photographic world so comprehensive a work on photographic chemistry. It will prove a valuable guide to all professional and amateur photographers who desire to work understandingly. While the older processes, the wet collodion process, for example, receive only passing attention, he gives a lucid and interesting explanation of all the various processes of recent introduction. Although there are several publications of a similar nature in the English

language, we would like to see this work translated and in the hands of all earnest workers.

SNAP-SHOT PHOTOGRAPHY; or, The Pleasures and Advantages of Hand-Camera Work, by Martin J. Harding, with snap-shot illustrations by the author. Will be read with pleasure and profit by all who carry a camera. It is a beautifully printed book, worthy of its place as first of "The Junior Photographer" series.

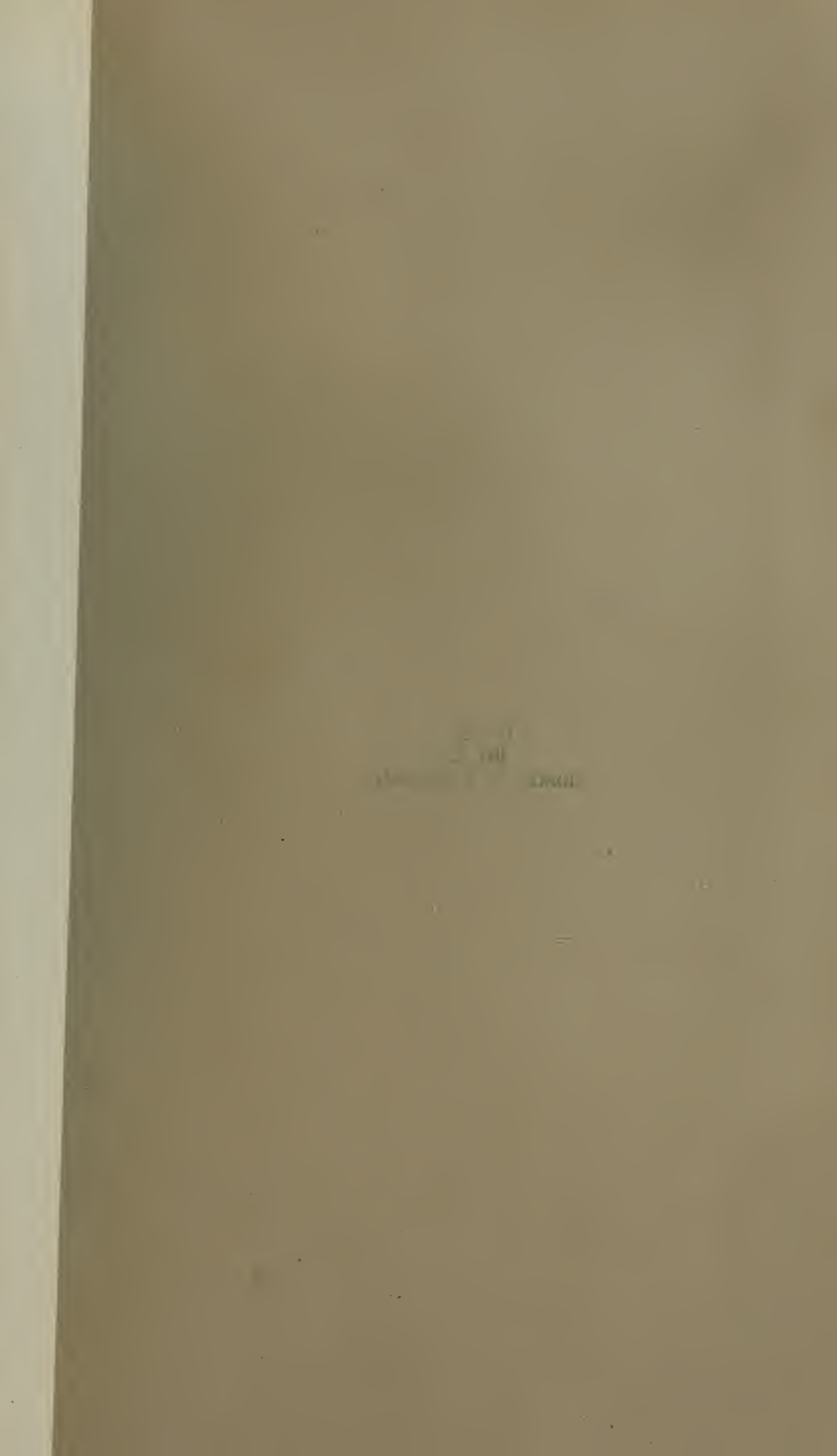
PHOTOGRAPHIE ET LE DROIT, by A. Bigeon, lawyer at the Paris Court of Appeals. A complete treatise of the laws governing the proprietorship of negatives, the right to photograph and the question of copyright. Published by Charles Mendel, 118 Rue d'Assas, Paris.

"LA PHOTOGRAVURE SANS PHOTOGRAPHIE," by L'Abbé J. Ferret. Gauthier-Villars et Fils, Paris.

"Die Mikrophotographie und die Projection," von Dr. Med. R. Neuhauss; "Die Photo-Galvanographie," von Ottonmar Volkmer; "Die Misserfolge in der Photographie," von H. Muller; being parts 6, 7 and 8 of "Encyklopädie der Photographie," published by Wilhelm Knapp, Halle a/S, Germany.

TABLE OF CONTENTS.

	PAGE		PAGE
A FAIR COUNTRY, <i>by D. C. Hasbrouck</i>	358	KEEPING QUALITIES OF PHOTOGRAPHIC SOLUTIONS, <i>by W. H. Stine</i>	360
A NOVEL AND INVISIBLE KIND OF TRANSPARENCY.....	368	LANTERN WORK.....	362
BICHROMATE BATHS FOR PIGMENT PAPERS, <i>by H. Vogel</i>	368	MORE TELE-PHOTO ATTACHMENT, <i>by D. L. Elmendorf</i>	362
BOOKS RECEIVED.....	380	OUR AIMS AND END, <i>by H. P. Robinson</i>	355
CARBON PRINTING FOR PROFESSIONALS.....	347	OUR ILLUSTRATION.....	373
CARE OF THE DUSTING BRUSH, <i>by A. L. Colton</i>	358	PHOTOGRAPHERS' ASSOCIATION OF MISSOURI.....	376
CLEMONS' DOUBLE HEAVY SALTED PAPER.....	372	PHOTOGRAPHING INTERIORS.....	345
FRILLING.....	349	RETOUCHING BY ELECTRICITY.....	373
HALF-TONE WORK—THE FISH-GLUE PROCESS, <i>by E. Liesegang</i>	367	SHUTTERS—AN IMPORTANT DECISION.....	370
HINTS FOR THE PRINTER, <i>by F. H. Doyle</i>	359	SOCIETIES.....	374
IMPROVEMENT IN APPARATUS.....	379	THE ELECTRIC LIGHT IN PHOTOGRAPHIC STUDIOS.....	348
ITEMS OF INTEREST.....	350	THE COUNTING AND FRAMING OF PRINTS.....	363





NEGATIVE & PRINT BY
ROCKWOOD.

PRINTED ON
AMERICAN "ARISTO" PAPER.

"UNCONVENTIONAL."

ANTHONY'S Photographic Bulletin.

EDITORS :

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

FREDERICK J. HARRISON.

Vol. XXV.

DECEMBER 1, 1894.

No. 12.

FLASH-LIGHT PHOTOGRAPHY.

THE flash-light season may fairly be said to be here, and the photographer who has not a flash-lamp should certainly add this most useful piece of apparatus to his equipment. We have in various issues of the BULLETIN alluded to a large flash-lamp apparatus for professional purposes, and reproduced in half-tone many photographs which, to say the least, were equal in quality to anything that could be made by daylight. Indeed, we feel we are entirely within bounds when we declare that, in careful hands, a flash-light machine of proper calibre will enable the intelligent photographer to successfully cope with subjects that he would not attempt to photograph by daylight, and this apart from the general availability of the flash-light at all hours and in any place. A large machine involves considerable outlay, but at this season of the year, when Christmas parties, private theatricals and other jollifications are rife, the photographer may soon realize a handsome profit. It seems to us that many golden opportunities are lost, and that with a little judicious advertising the professional photographer might boom business not a little by the aid of the flash-lamp.

The amateur photographer may find pleasure and profit in flash-light photography. A large, expensive machine is here out of the question, and is unnecessary, for with a small hand flash-lamp much good work may be done. Flash powders burnt on bricks and pieces of tin are not recommended. A good lamp and pure magnesium powder are perfectly safe in the hands of any intelligent individual, and give the best results. The lamp should be of such design that all the powder passes through the flame, and the powder should be forced through the flame by means of a bulb and tube, this permitting of adjusting the lamp at any suitable height, and, if desired, enabling the operator to be included in the picture. There seems to exist among beginners some doubt as to the safety of a flash-lamp, but, using pure magnesium powder, no element of danger

is introduced. A compound powder must never be used in a flash-lamp in which the powder is blown through the flame.

The effect on the eye of the sudden brilliant light may be minimized by leaving the gas or lamps burning in the room, and the timidity of some sitters may be overcome by a preliminary firing off of the lamp to assure them that it is harmless. The flat, smoky appearance of flashlight work is avoided by placing the lamp to one side of the sitter and avoiding hard shadows by means of a reflector. The fastest plates should be used, and Cramer isochromatic plates will give the best results if the proper precautions regarding darkroom illumination are observed during development. Focusing is not easy unless a light is held



FLASH-LIGHT SILHOUETTE (BY H. W. SMITH).

near the subject. The best plan is to focus on some printed matter illuminated by a good lamp.

As a pleasant diversion, we would suggest the making of what are known as flash-light silhouettes. These are very easily made, and many grotesque effects may be produced, which, when exhibited on the lantern screen, will excite considerable merriment and speculation. A white sheet is tightly stretched in the doorway between two rooms, and the subjects posed as desired. After focusing, with the aid of a candle or lamps, the flash-lamp is fired behind the sheet at a distance sufficient to ensure even illumination. It will be found best to darken the room in which are the subject and camera and to use a small flash. When developing such silhouettes but little of the alkali should be used in the solution, the idea being to get density rather than detail.

ITEMS OF INTEREST.

Professor JOSEPH N. BRADFORD sends us a negative preserver showing the record kept by students in photography at the Ohio State University. He writes: "Enclosed you will find a negative envelope, with record blank, that I have made for the students in my classes in photography. By using this and a 'Note Book of Photography,' published by E. & H. T. Anthony & Co., the valuable practice of keeping an accurate record of their work is thoroughly carried into effect. * * * It would be valuable to many amateur workers, who, by the use of such are indirectly taught to observe and practice many little things which contribute to successful work and results." The matter on the envelope is as follows: No. 20; Subject, University Hall, Ohio State University; Exposure, three seconds, stop, $f/32$; September 25, 1893; Developer, pyro; Plate, Carbutt ortho., 23; Bromide time, ten seconds, 3 feet from gas burner; Remarks, little over-exposed, prints best on bromide paper; Name, Joseph N. Bradford.

W. K. BURTON writes: "In photographing subjects that show great extremes of light and shade, especially in the case of interiors, the lens should be kept scrupulously clean. Care should be taken that all parts of the interior of the camera are dead black, and all oblique light not actually needed to form the image should be, as far as possible, prevented from entering the lens by a shade of some kind in front of the camera. In photographing particularly trying subjects we have sometimes found it convenient to erect a second camera, nose to nose with the principal one, removing the rising front and ground-glass of the second camera, allowing the lens of the other to project into it, and extending the bellows just to such a length that all but the subject to be photographed is shaded off or framed by the large open end of the auxiliary camera."

THE new quarterly, *The New Science Review*, is a capital magazine and will be heartily welcomed by every intelligent reader. It comes at an opportune moment, and is, we believe, destined to play no mean part in the substitution of science for sentiment, and truth for tradition.

IN connection with the article on the keeping qualities of photographic solutions, published in the November BULLETIN, we would remark that in "The International Annual" for 1890, Prof. Charles F. Himes, writing on "Blue-Print Solutions," says: "The mixed solution will keep for months; the writer has used some, with satisfactory results, that was more than a year old. All that is necessary is to keep it carefully excluded from the light, and to filter immediately before use, though, with care, a perfectly clear liquid may sometimes be poured out from a full bottle, after it has been undisturbed for some time. A very turbid solution need not be thrown away as worthless, but the very slightest turbidity demands filtration."

ON Wednesday evening, October 31st, Mr. William H. Robey, of the firm of Horgan, Robey & Co., celebrated the twenty-fifth anniversary of his marriage. Mr. and Mrs. Robey were assisted in receiving their friends by Miss Annie Smith, the sister of Mrs. Robey, and Miss Mary B. Lithgow, of Kentucky. The ushers were Gen. F. W. Abbott, of Maine, and Col. John Stalker, Dr. William

H. Robey acting as Master of Ceremonies. The house was handsomely decorated with potted plants and cut flowers, a collation was served and an orchestra rendered delightful music. Among those present were Miss Lithgow, Miss Smith, Gen. and Mrs. Abbott, Col. and Mrs. Stalker, Mr. and Mrs. Frank Stanley, Dr. and Mrs. Gilbert, Mr. and Mrs. Elmer Chickering, Mr. and Mrs. A. E. Hill. Letters of regret were received from Col. Vincent M. Wilcox, Mr. Richard Anthony, Mr. F. A. Anthony, Mr. Edward Cope, Mr. G. Cramer, Mr. F. M. Harrison, and many others. Mr. and Mrs. Robey were the recipients of many handsome and costly remembrances.

Messrs. MULLETT BROS. write us as follows: "The International Annual" is received; we desire to extend our congratulations on the success of the work. We consider it by far the best one that you have yet issued."

FROM John A. Hanson, of the Elite Studio, Grangeville, Idaho, we have received several excellent prints showing the operation of threshing machines on the border of the Nez Perces Reservation, which will soon be opened for settlement, over a million dollars being paid for it by the Government.

O. A. PALMER, of Matteawan, N. Y., sends us an interesting letter, in which he states that he has spent forty-five years picture-making and is not ready to quit yet. He commenced in 1849, with S. D. Humphrey as his tutor. He expressed a desire to meet Mr. Allen and talk over daguerreotype days.

THE most recent method of applying photography to textile fabrics, as a substitute for the usual process with engraved rollers, is said to be a decided improvement on anything heretofore in vogue. The material to be printed is dyed at the boil with primuline and common salt, then washed and diazodized in a bath of one-fourth per cent. of nitrate of soda, strongly acidulated with sulphuric or hydrochloric acid; after a second washing, and with the tissue still damp, the photographic plates, with flowers, leaves or other designs, are placed upon it, and the whole exposed to the sun, half a minute exposure being long enough in good weather with a strong light, or, if the sky be cloudy, any time up to half an hour can be employed if convenient, answering the purpose very satisfactorily. To gauge the operation a small piece of the cloth is exposed to the sun or arc electrical light and the reaction carefully watched. After sufficient exposure has been given, the cloth is passed at once into a developing bath, or, if this be not ready, it is to be placed immediately in a dark closet. The development is done as for colors dyed on wool, the tints appearing only on the parts protected by the photographic design. It is said that a wide range of shades is practicable by the use of the various developers, among these as enumerated being a red, by an alkaline solution of naphthol; a yellow, by an alkaline solution of phenol, while chestnut and chocolate come by an alkaline solution of naphthol-salphonic acid, and resorcine gives an orange.

Professor J. C. ADAIR, of Tarkio College, Mo., writes us regarding the Wynne's exposure meter. He says: "I doubted its usefulness at first. I have taken a number of plates in various conditions of the light, and every time have obtained excellent negatives. It will soon pay for itself. I now expose one plate where before I often exposed two, and now obtain uniformly good results."

AN intensifier for negatives reproducing lines :

Water.....	1,000 parts.
Iodine.....	14 “
Iodide of potassium.....	27 “

The negative is allowed to remain in this until entirely yellow. It is thoroughly washed, so that the water running from it is colorless. Afterward the negative is placed in a 1 per cent. solution of Schlippe's salt rendered alkaline by a little caustic soda.

WARM-TONED platinotype prints can be obtained by using a pad composed of a sheet of blotting paper saturated in a strong solution of bichloride of mercury and dried, in the printing frame.

TO POWDER GLASS.—Make a piece of glass red hot in the fire, and while in this state plunge into cold water; it will immediately break into powder; it can then be sifted and dried. It is then fit for filtering varnishes and for other purposes.

A NEW reducer for dense negatives :

Ferrous oxalate.....	80 grains.
Sulphite of soda.....	65 “
Oxalic acid.....	20 “
Hypo.....	6½ drams.
Water.....	3½ ounces.

By simply mentioning Anthony's Photographic BULLETIN, when ordering goods advertised in its columns, you will confer a distinct favor upon us.

OVER half the edition of “The International Annual” has been disposed of, and there seems to be no doubts regarding its merits. Competent judges say that it is the best that has yet been issued, and these same judges dubbed last year's volume as “perfect.” The seventh volume contains two actual photographs; one, an “Aristo-Platino,” by Falk, and the other, an “Aristo, Jr.,” print, from negatives by Coover and Robinson. The other illustrations are simply unique, being made from photographs furnished by the leading photographers in the country. Of greatest interest, perhaps, are two full-page illustrations from negatives kindly supplied by Mr. D. L. Elmendorf. Of these, two are of St. Paul's Cathedral, London, one from a negative made with a 4 x 5 Dallmeyer rapid rectilinear lens, and another made under similar circumstances, but with the addition of the tele-photo attachment. The other is a view of the two mountains, Castor and Pollux. Lanternists and lantern-slide makers will find much to interest them in this volume of the “Annual.” It is, perhaps, unnecessary for us to give any detailed index of the book. It suffices to say that every subject of photography is discussed by that one person in the world most competent to write about it.

By the time the BULLETIN is in the hands of our readers a new dry plate will be on the market which, it seems to us, is entitled to a share of their attention and patronage. The new comer will be known as the “Climax” dry plate, and

will be manufactured by the Standard Dry Plate Company, who will discontinue making the Standard dry plate. We have made many experiments with the "Climax" plate, and would recommend our readers, both professional and amateur, to give it a thorough trial. We have found it equal to the best in every point, and superior to them in printing quality. It is a quick, clean plate, and will be found without rival, both in the studio and in the field.

THE success of the BULLETIN during the past year has encouraged us considerably, and we propose introducing several new features in the coming year, among which may particularly be mentioned a monthly *résumé* of photographic work in England by Mr. W. H. Harrison, who is probably one of the best informed men in English photographic circles. Mr. Harrison was recently the editor of the *Photographic News*, and his articles will doubtless be useful and interesting. More attention will be paid by the BULLETIN in the future to photo-engraving and all branches of process work. This subject is of vital interest to all, dealing as it does with the production of illustrations by photographic methods. The amateur must not for one moment allow himself to believe that this is beyond him or outside his province. Process work is simply carrying on photography to a point where it is of much greater value to the many. Mr. Stephen H. Horgan, a practical photo-engraver and a writer who has already made considerable reputation throughout the world, will furnish three or four pages of process matter, which will be of immense value to the photo-engraver and the photographer in his daily work. These two items alone will make the BULLETIN of supreme value. We have arranged for a series of illustrations which will be second to none. The most prominent photographers in the country are at the present moment engaged upon a series of negatives for our use, and we can promise our readers something phenomenal in the way of studio work. The text matter of the BULLETIN has recently been more copiously illustrated with half-tones and zinc etchings, and this feature it is proposed to continue and enlarge upon. As heretofore, however, no stock plates or borrowed plates will be used, but the illustrations will be original and have direct bearing on the text matter. The BULLETIN now has a larger circulation than any other American photographic journal, contains more advertisements, and is certainly better illustrated. It is printed entirely on coated paper, contains more original matter than any other American journal, and, while we are not given to boasting, we feel that we can say that our assertion that the BULLETIN is "the leading photographic journal in America" is borne out by the facts. We invite comparison with any of its competitors.

The *Photogram* for November is an exceedingly interesting number, the article "The Pall Mall Show, 1894," by Horsley Hinton, being splendidly illustrated and capitably written. It would seem to us that all worthy exhibitions should receive this treatment.

RENEW your subscription to the BULLETIN now.

All matter for the January issue of the BULLETIN, all new advertisements and matter relating thereto, must reach us on or before December 20th.

PHOTOGRAPHY IN CENTRAL AMERICA.

THOSE who desire a winter outing can hardly find a more interesting region than some portions of Central America. The writer's acquaintance in these countries covers portions of Colombia, Costa Rica and Nicaragua, and is based upon a residence of five years in the latter country.

If one takes steamer from New York to Port Limon, Costa Rica, touching at Kingston, Jamaica, he will find himself transported, in about eight days, from winter to a land of perpetual summer.

There is little of interest at Port Limon, but the trip from there to San José, the capital, about 100 miles by rail, will well repay any lover of mountain scenery. Even the famous Denver and Rio Grande Railway does not afford any finer scenery than is to be found along this road. At the little station of Turialba the volcano of the same name bursts full into view, its summit piercing the clouds at an elevation of over 10,000 feet, while a little further on is Irazu, at whose base nestles the interesting old city of Cartago, which has more than once been nearly destroyed by volcanic eruptions.



From Cartago to San José the road runs for miles through immense coffee plantations, where one catches occasional glimpses of the fair Spanish señoritas gathering and curing the fruit. This valley is one of the garden spots of earth, for, in addition to all the tropical fruits and vegetables, nearly all the fruits of the temperate zone grow luxuriantly.

At San José there is an excellent photograph gallery, owned by an American, Mr. Paynter, formerly Rudd & Paynter, who has a fine collection of tropical views, and some especially fine ones of the interiors of the craters of some of the volcanoes.

In this vicinity one can find mountain scenery and cloud effects which can rarely be found elsewhere.

In Nicaragua there are many points of interest easily accessible from Managua, the capital, or from the towns of Granada, Leon, and Rivas. At both

Granada and Rivas one still sees much to remind him of the Walker expedition, in the shape of ruined and battered churches and houses.

Lake Nicaragua is the largest body of fresh water south of our own great lakes, and is a lovely sheet of water, surrounded by high mountains and dotted by many volcanic islands. About eight miles from Granada are the Thousand Islands. An artist in search of the beautiful could not do better than spend a few days here. The islands of Zapatera and Solentename contain many old burying mounds and ancient stone idols, some of which the writer had an opportunity to photograph; also much ancient pottery. On the Island of Ometepe is the volcano of the same name, which rises to a height of over 5,000 feet above the lake. Its crater is accessible to a good climber.

Near the Indian village of Masaya is the lake of the same name, which occupies the crater of an old volcano, the walls of which are about 800 feet in height. Its rocky shores are always alive with washerwomen in a more or less décolleté costume. The rocks at various points are covered with strange figures and hieroglyphics, which were carved by some unknown, prehistoric race.



There are many other lakes which are the craters of extinct volcanoes, each having its own peculiar charm.

Around the Indian villages of Masaya and Jinotepe one can hardly go amiss in search of novel and interesting sights.

Near Leon is probably the greatest volcano center in North America, there being no less than fourteen in view from one point, some being extinct and others active.

Spanish is the prevailing language in all Central American countries, and one ought to be able to speak it somewhat, in order to travel much alone.

In traveling in these countries, one ought always to carry a pair of blankets and a mosquito net.

Whatever camera one takes should be put together with screws, for the excessive moisture of the wet season and the excessive dryness of the dry season

will soon loosen any glue. All movable parts should be of brass, running on brass. The writer has had experiences in this line which were far from pleasant. The slides of plate-holders should be of hard rubber.

If one is to be there during the wet season, plates should be packed in tin boxes and hermetically sealed. Do not attempt to use roll films, if they can be avoided; they will mildew and spot much quicker than plates.

As ice is not always obtainable, only plates which will stand warm developer and water should be taken, if any are to be developed on the trip.

On account of the great difference in the light, it would be safe to develop some, to make sure of correct exposure. The writer has known several persons who have lost nearly all of their negatives from over-exposure.

As galleries are not accessible, and but few of the rooms can be made dark, a convenient and portable darkroom can be made by making a canopy of black calico about 6 feet square and 8 feet high, which can be hung up by strings attached to the four corners, a hole being cut in one side and covered with ruby or orange cloth, and a lamp set outside. Any chemicals needed should be carried. If developing powders are used, they should be packed in tin or glass,



and sealed. A rubber bag ought to be taken in which to carry the outfit if traveling in rainy weather.

The most favorable time for visiting these countries is from December to May, which is the dry season. During this time the conditions are favorable for camera work and the roads are at their best, which means that they are passable on horseback.

Everywhere around the lake deer are plentiful, and the lake abounds in good fish.

If one wishes to while away a few weeks or months, roughing it in a lazy, easy-going sort of a way, with rod, and gun, and camera, in fields which have been but little worked, and which contain much that is new and interesting, he could hardly find a more attractive place.

FRANK P. DAVIS.

PHOTOGRAPHY IN LONDON.

THE time has nearly arrived for the abolition of the "standard candle," the old-established but barbarous legal unit of light for gas testing in Great Britain, and on Friday, November 2d, the leading suggested substitutes were exhibited and reviewed at the Lewisham Camera Club by Mr. W. J. Dibden, chemist to the London County Council. He pointed out various sources of error due to the candle, and said that it is liable to give wrong results to the extent of a maximum of about 10 per cent. The French standard, the Carcel lamp, is a better one, liable to error to the extent of about 5 or 6 per cent. It is an Argand lamp, burning colza oil.

The legal standard in Germany is a candle made of paraffin instead of spermaceti, as in the English case. The German candle is the better made of the two, and somewhat less liable to error. Although it is the legal standard in that country, the Germans look with more favorable eyes upon the amyl-acetate lamp, which is much used in scientific work. In using their candle they snuff it when required, and do not trouble about the weight of paraffin burnt in a given time, but endeavor to secure uniformity in the height of the flame. In the United States he thought the English candle was used for gas-testing, but was not sure, and in most of continental Europe the French Carcel lamp furnishes the legal standard light.

Of the proposed possible new English standards he spoke of the Methven screen, consisting of a screen with a rectangular aperture, through which the brightest part of an uniform Argand flame sends its rays. He also described Mr. Vernon Harcourt's one-candle and ten-candle pentane lamps. The advantage of pentane is that it is a hydro-carbon of constant composition; it is highly volatile, and is burnt mixed with a proportion of common air. Of his own proposed legal standard, Mr. Dibden said that he had taken some of the best points of prior inventions and combined them. He takes pentane as a standard combustible, and passes air or sometimes coal-gas over it, in a half-filled spiral reservoir which forms the base of his lamp. The surface of the pentane is kept at uniform level by being supplied from a vessel made on the bird-fountain principle. The Argand burner is made to give a flame of a slightly barrel shape, and the light from the top of the flame is cut off by a tubular screen. The lamp has also a device for the avoidance of errors due to parallax, which is liable to come in in lamps of this class, because of the distance between the screen and the flame. Of the amyl-acetate lamp he spoke highly, but said that it is beset with the difficulty of seeing that the flame is always at uniform height. The eyes of different observers do not agree when they are making this adjustment. He also said that the flame is much liable to disturbance by air currents.

Professor Lambert remarked that the determination of standards is an important thing for science, and that a standard of light for photographic purposes is much needed. It would be a great mistake to adopt a small unit of light, as in the case of the Methven screen. From a small unit of light any results desired may be obtained when testing.

The next speaker was Mr. Cadett, who uses Hurter & Driffield's system in testing photographic plates; he said that he had found the standard candle to be useless in the work, but for a long time past he had been using Mr. Dibden's

light at his dry-plate works, taking about forty-eight readings per day. He had found the light to be sensibly uniform and trustworthy. In testing the speed of plates it is necessary to have a standard developer as well as a standard light ; also, the temperature of the developer must be uniform.

Another speaker then described Mr. Vernon Harcourt's new standard lamp, exhibited at the British Association at Oxford. It burns pentane, which rises through a wick, but is vaporized before it reaches the top of the burner by heat conducted downwards from the flame by means of thick brasswork ; the top of the flame is concealed from view by a tubular metal screen. Mr. Harcourt had been surprised at the variations in the luminosity of flames due to variations in the amount of aqueous vapor in the air. This is all the more unexpected, because the flame itself is always giving off aqueous vapor.

The Photographic Salon closes its doors to-day, November 3d, after a successful run. On the last evening in October Mr. A. Maskell read a paper on the premises, in the course of which he demonstrated the working of M. Artigue's carbon process, in which there is no reversing or transferring of the film, but the printing goes on the same as with any other paper. Sawdust is put in the warm water by which the bichromate of potash and surplus pigment are washed out. Mr. Maskell stated that M. Artigue is a peculiar man ; instead of being pleased at inquiries regarding his process, he looks upon them as a nuisance, and leaves all letters unanswered. The only way in which he could get the specimens used that evening was by the intervention of a friend in Paris, who called upon M. Artigue. The latter was also described by Mr. George Davison as "impracticable." Some results of the process shown were exceedingly good.

LONDON, November 3, 1894.

W. H. HARRISON.

THE ELECTRIC LIGHT IN PHOTOGRAPHIC STUDIOS— A FEW HINTS.

IN all departures from old-established lines, and upon the introduction of every new and important invention, many difficulties have to be met, carefully considered, and surmounted. Most of these obstacles arise from the impression that by and through these inventions a royal road to success has been established, without the exercise of common sense, and omitting the same conscientious effort that we bring to bear in the ordinary methods of working. Therefore in the introduction of what is such a revolution in the art of photography as the electric light, and its new methods of working, many have met what seem to them insuperable difficulties. Speaking strongly and not very elegantly, this is all "gammon."

The new electric light wont go alone ; it wont abolish effort ; neither does it provide any royal road to success, without work and experience. Because it is claimed, and is a fact, that the electric light is quicker than the ordinary skylight, each photographer attempts to beat the record and not give sufficient exposure ; they do not give care enough to the arrangement of their reflectors, and are not sufficiently careful as to the source of, or to the angle of, light, as it falls upon the sitter. I think that the points here mentioned are the ones that need consideration.

Now let me make this one statement concerning the power of light, which may be a key to the situation.

Light loses its power inversely as the square of the distance. Putting it in simpler form ; if the light is, we will say, 6 feet from the sitter, and is moved to a distance of 12 feet, the light loses its intensity, or rather is diluted so as to require four times the exposure. Therefore the sitter should be as near to the source of light as is practical to secure great rapidity. The first thing that will impress the intelligent operator, when he moves the sitter close to the source of light is a rather sharply defined shadow. Here is where he wants a head screen, made preferably of architect's drawing linen, or fine book muslin, which gives a soft beautiful light to the head, and transparency to the shadows. This should be so placed as to affect the head only, letting the light strike the drapery in full force, and hence secure that "crispness" so desirable in drapery.

Another point, carefully consider the angle at which the light falls upon the sitter. My own method, both under this light and when working by daylight, is to let the light fall at an angle of as near 45 degrees from the side and from the front as is possible. This gives what may be called normal shadow. In my own case, with the Anthony light, I found myself by accident at first working with a light too low, which deprived me of a good deal of modeling. I gave this matter, and advise all others to do the same thing, careful thought and experiment, not necessarily by exposure of plates, but by careful studies of light and shadow, as they may appear to the eye; the camera will faithfully record that effect.

Now, it is a well-known fact that our most expert photographers, of long experience and ability, often have to study and practice under a new skylight and new surroundings, for some little time, before they can get the mastery of all its possibilities. If this be so with ordinary skylights, is it not fair to assume that such a radical departure as a new source of light, to wit, the electric light, needs quite as much, if not more, careful consideration and practice? So study your light, its angles, the value of the reflectors, being sure that the camera sees with as much fidelity as the human eye.

I am led to this discussion from the fact that one or two old friends have taken hold of the electric light, and, after two or three exposures, have written me for suggestions. I will therefore only reiterate what I have already intimated, that this, like all other good things, must be conscientiously studied, and experience gained ; not assuming that the light has any supernatural powers.

GEO. G. ROCKWOOD.



Orthochromatic Photography.—Dr. H. W. Vogel calls attention to an erroneous idea that prevails regarding orthochromatic plates. He says that professional as well as amateurs are often of the opinion that the yellow screen is unnecessary in the early morning and late in the afternoon. It seems to be argued that at these hours the atmosphere acts as a "yellow ray filter." This sounds very plausible, but the principal fact is ignored. The air is a ray filter for the direct sunlight, but also a ray reflector for the blue light. The preponderance of the blue rays in the sky diminishes from morning towards noon, and then increases again. As the object of the yellow screen is to reduce the strong action of the blue rays, it follows that the screen is very essential, both in the early morning and in the evening.

THE DEPOSIT OF SILVER IN PHOTOGRAPHIC PLATES.

THE nature of the reaction that takes place in an emulsion film under the influence of a developing agent is at present an unsettled question. All that is known is that the result of this reaction is a deposit of metallic silver wherever the light has acted. In a gelatine plate, the deposit results from the reduction of the silver within the film; in a wet plate, the silver is deposited from the free nitrate remaining on the plate from the sensitizing solution. To distinguish these two reactions, the former is termed chemical development, and the latter, physical development. In chemical development, the silver salts in the emulsion, where the light has acted, become more easily decomposed than the remainder, and yield to the action of the developer first; but the chemical action by which this change is brought about is not known. The exposed part of the film also acquires the power of promoting reduction in silver solutions in presence of a reducing agent, and it is on this property that physical development depends. If a solution of nitrate of silver is added to one of pyrogallol acidified with nitric acid, the mixture may stand alone for an hour or more before any silver is thrown down, but when flowed over an exposed gelatine or collodion emulsion plate a deposit of silver is immediately formed wherever the light has acted on the film.

Chloride and nearly all organic salts of silver possess this property to a certain extent; faint impressions on albumen or gelatine papers containing an excess of nitrate of silver can be strongly developed by an acid solution of sulphate of iron; paper prepared with citrate or oxalate of silver may be treated in the same way.

It is quite probable that the reducing power of the exposed silver salt is active in precipitating the gold in toning; a pure silver image is much more difficult to tone with gold than one formed of the darkened silver salts.

The silver deposit in a gelatine film has a very wide range of variation, both in color and density. The opacity of the deposit depends to a great extent on the size of the grain; for a given quantity of silver, the opacity increases as the size of the grain is diminished.

The color of the deposit has a marked effect on the printing density of the negative. The ferrous oxalate developer invariably gives a gray deposit; the organic developing agents often give brown or red shades. The brown color sometimes given by pyrogallol has been attributed to some colored organic deposit resulting from the decomposition of the developer; while it is true that the color may be partly due to this cause, the metallic silver itself is capable of assuming varied colors. The greatest variety of colors occurs on a gelatino-chloride plate developed with ferrous salts. A ferrous oxalate developer of moderate strength gives a black deposit; if the solution is concentrated, the deposit has a purple tone; if the solution is diluted and a bromide added, the development proceeds slowly, and the color ranges from bright red to brown; on adding more bromide a very bright orange color may be obtained. The ferrous citro-oxalate developer gives purple and blue tones.

Colored deposits occur under certain conditions in physical development. The iron solution used in developing wet plates always gives a neutral gray tone, but if a solution of hydroquinone, acidified with nitric acid, is substituted for

the iron solution, the deposit is sometimes a bright blue, even by transmitted light. The brilliancy of this color is variable, and it is difficult to obtain two specimens exactly alike. Plates developed in this way sometimes have the appearance of blue glass.

To account for these color phenomena, it would seem more reasonable to attribute them to the presence of some foreign substance precipitated with the silver than to suppose that a simple metallic deposit could assume so many different colors; but this first explanation becomes as difficult as the second when it is observed that on the chloride plate a variety of different colors may be produced with the same developer, and that, after all traces of any deposit that the iron solution could leave have been removed by chemical means, the color remains.

The colored deposits have a very strong resemblance to the allotropic forms of metallic silver recently discovered by M. Carey Lea. When a solution of nitrate of silver is acted on by certain reducing agents, the metal which separates out exhibits varied colors and a chemical behavior quite different from that of normal silver; the colors range from blue and purple to bright red—some samples having the appearance of metallic gold. These colored forms are easily converted into normal silver by the action of acids, and even by friction alone. The blue variety is said to be soluble in water, giving a clear blue solution; this supposed solution may possibly be the solid metal in an extremely fine state of division, for on standing a certain length of time, the metal separates out. It has been doubted that these forms are true allotropic modifications of metallic silver, though there seems to be no other explanation of them.

The properties of allotropic silver furnish an explanation of all the color phenomena observed in the film deposits; a part of the silver forming the developed image probably exists in one of the allotropic forms.

CORWIN GITCHELL.

HANDICAPS IN PHOTOGRAPHY.

WHY not have handicap exhibitions in amateur photography? In nearly all other forms of public contest the handicap is a well-recognized element, and certainly there are few, if any, pursuits in which the devotees work under more widely divergent conditions of leisure, experience, training, apparatus, finance, and the other various influences which go to help or hinder in the effort at picture-making. There are those who by necessity, as well as those who by preference, limit themselves to the choice and composition of subject and the exposure of the plate. The writer knows one amateur who would by many be classed among the "press-and-button" crowd, as he sends all his exposures to a professional for development and printing, because business will not permit his taking sufficient time for that part of the work. Yet he has been an amateur for about thirty years, spends more time and thought on the selection, composition, and exposure of a single picture than the average exhibitor does on the full production of a print, and could do all "the rest" if time would permit. While his work is not listed in exhibition catalogues, it is familiar through its reproduction in many photographic and other periodicals, and commands widespread admiration and praise. There is a distinct example of handicap by lack of leisure.

Then, there are the multitude who, for collateral reasons, are handicapped by

lack of funds, and hence lack of suitable apparatus. We are constantly reminded that "tools do not make the workman," and that a thorough artist can do better work with poor tools than a bungler with the best, which is true. Nevertheless, the possession of high-grade apparatus (this does not necessarily mean the highest priced) and the most improved conveniences are great advantages. Only the favored few can afford outfits that provide means to meet every emergency.

Again we find many who work entirely without assistance from fellow workers, without the stimulus of club membership, without instruction—almost in the condition of pioneers in an undiscovered country. Others are graduates of photographic, scientific and art schools, members of societies and clubs, and constantly in touch with things artistic and photographic.

These are but suggestions of a few of the reasons why as a rule the medals, the prizes, and the honors of the exhibitions are usually captured by a certain few; and why the greater part of the amateurs have not the remotest chance for the prizes, or much interest in the competitions.

I do not wish to be understood as wishing the standard of merit lowered at the usual exhibitions; or as finding any fault with their methods, for they are undoubtedly doing a good work as they are at present managed, and the rules of the last joint exhibition were well adapted to advance the artistic quality of the work done. But what I had in mind was another kind of exhibition, returning somewhat to older plans, for the sake more of encouraging beginners, and bringing to the front the technical features. In a word an additional exhibition.

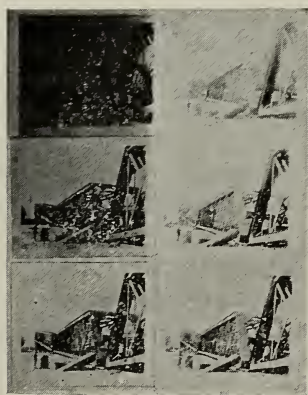
In such an exhibition each picture should be accompanied by as complete a history of its production as possible, and, if practicable, by the negative from which it was produced. Special care should be taken that the exhibition should not degenerate into a plate or paper advertising scheme, by forbidding the use of any names of makers or dealers. Exhibits should be classified by rules made to cover as wide a range of condition and circumstance as possible. Would not such an exhibition have a practical value, and a more widespread interest than one purely artistic? Even without prizes, would not our workers, from pure love of the work, be willing to support such an exhibition by a generous display? Let us hear the opinions of those who have had experience in the promoting and arranging of exhibitions and competitions.

C. M. GILES.

THE BURTON ACTINOMETER FOR CARBON PRINTING.

In the August issue of your BULLETIN you publish a letter by me describing a method of making a Burton (H. J. Burton) actinometer for carbon printing. I there describe the use of carbon tissue. I now wish to state that I find a dry plate a better material for the production of an actinometer of the kind referred to than carbon tissue. So far as I remember, Mr. H. J. Burton recommended either carbon tissue or a Woodbury-type impression, on the grounds that either of these was permanent. Nodoubt this is true, but I think an image on a dry plate may be taken as being, to all intents and purposes, permanent as an actinometer, and it is a most decided advantage to have the deposit of the same

color and nature as that of the negatives with which the actinometer is to be compared. The use of the actinometer depends entirely on the ability to judge to which of a set of small negatives of different densities, or rather opacities, the negative to be printed from in carbon most nearly corresponds, and this is difficult if the colors are not the same. Now, no carbon tissue that I know of gives just the color of image that we have in a dry-plate negative. It may be said that, to be consistent, I ought to insist on a separate actinometer for every one of several developers that give images of quite perceptibly different tints. Well, there would be no harm in having such actinometers, and I think if I printed on a large scale for the trade, I should have them; but for my own purposes, I find one color enough. Though I often use other developers, I consider pyro the standard, and I find that pyro-developed actinometers answer all my requirements. I have, however, found it advisable to make two, one from a portrait negative, the other from a landscape; for I find it very difficult to judge of the exposure under a portrait negative using a landscape actinometer and *vice versa*.



I do not consider it necessary to occupy your space with a description of how a Burton actinometer can be made on a dry plate, the method being almost exactly the same as for making one on carbon tissue, but that the exposure under the transparencies is made at a distance of several feet from a candle, instead of to sunlight.

I enclose a couple of prints from my actinometers.

W. K. BURTON.

IMPERIAL UNIVERSITY, TOKYO, JAPAN, September 23, 1894.

(1) ON SOME NEW METHODS OF OBTAINING PLATINO-CHLORIDES. (2) PROBABLE EXISTENCE OF A PLATINUM SUBCHLORIDE.*

THE methods now in use for obtaining potassium platino-chloride are: (1) Heating platinic chloride to 250 to 300 degrees Cent. and treating with potassium chloride. (2) Passing sulphurous acid through a boiling solution of platinic chloride and treating with potassium chloride. To these older methods Thomsen has added (3) treatment of potassium platini-chloride with cuprous chloride.

All these have objections—With (1) it is not easy to obtain a uniform conversion; (2) requires to be very closely watched to catch the exact moment at which the change is complete; (3) is liable to a vexatious reverse action by

* From the *American Journal of Science*, Vol. XLVIII, November, 1894.

which platinous salt is reconverted into platinic salt at the expense of the cupric chloride present. Thomsen mentions this danger as occurring in hot solutions. It probably depends, however, more on concentration than on temperature. The larger the proportion of cupric chloride present in any solution, the greater the tendency to reversal. In one case $\frac{1}{2}$ liter of mother water containing platinous salt was set aside for spontaneous evaporation. In a few days large crystals of the red salt began to form; in a few days more, instead of these increasing, there was not a crystal of the platinous salt left.

These objections led me to look for something different. I have found two methods, either of which gives good results.

FIRST METHOD. POTASSIUM ACID SULPHITE.

Potassium platinic chloride is to be moderately heated with solution of the acid sulphite; convenient proportions are, platinum salt, 12 grams; acid sulphite, 9 grams; water, 160 c.c. The mixture can be placed over a hot-water bath in a covered vessel and left to itself. The reduction takes about ten to twelve hours, and is known to be complete when the solution has a pure red color free from yellow. The cover is then removed and the liquid evaporated to the crystallizing point.

If, as may happen, the red chloride and the other salts crystallize out together, it is best to redissolve them by heat in a small quantity of water saturated with potassium chloride. The red salt then crystallizes out first.

SECOND METHOD. ALKALINE HYPOPHOSPHITES.

By reason of its great reducing powers a very small proportion of alkaline hypophosphite is capable of converting the yellow platinum salt to the red; theoretically 1 part of hypophosphite should reduce 9 or 10 parts of platinum salt. We can hasten the operation somewhat by using an excess of hypophosphite, but then must work at a lower temperature. Both methods will be given.

In using an excess of hypophosphite it is convenient to take 10 grams of platinum salt, 2 grams, or even more, of potassium hypophosphite, and 600 c.c. of water. These are placed in a flask and very gently heated. The best temperature is 66 to 70 degrees Cent.

There is a very easy way of obtaining this temperature and of keeping it perfectly constant for any length of time, by taking an ordinary water stove of the kind in which a chamber is surrounded on five sides by water. Such a stove is to be furnished with a Kekulé constant level, regulated to keep the water jacket half full. If now the heat is turned on so as to keep the water gently boiling, it will be found that solutions placed on the top maintain a perfectly steady temperature, varying from 55 to 72 degrees Cent. according to the shape of the vessel, but constant for any one shape. The lowest temperature, about 55 degrees, is obtained with an open, flat porcelain basin. It rises gradually as the shape of the vessel tends more to check evaporation. When a liter flask has about 2 inches of solution the temperature will remain steady at about 66 degrees, and this temperature is very suitable for the treatment just described.

Even with this excess of reducing agent ten or twelve hours will be required. The solution must not be allowed to evaporate to less than one-half its original bulk.

The completion of the operation is known by the solution showing a

perfectly pure ruby red color. The slightest shade of orange indicates the presence of the yellow platinum salt. It is much safer to allow the solution to evaporate spontaneously. If evaporated by heat there is always a chance that the reduction may go too far.

There is not much to choose between these two methods. The first, with acid sulphite, is the safest, because there is no danger of carrying it too far. On the other hand in the second method the red salt separates more easily and completely in crystallizing.

On the whole the method which I prefer is to keep down the hypophosphite and use a higher temperature and longer heating. For this, a weighed quantity of platinum salt may be placed in a flask with 30 c. c. of water for each gram of the salt, and a quantity of potassium hypophosphite equal in weight to $\frac{1}{5}$ of the platinum salt. The flask is to be placed in a water bath which is kept at 80 to 90 degrees Cent. In consequence of the small proportion of hypophosphite the action is slow, requiring about eighteen or twenty hours for complete conversion. No attention during this time is required, and the advantages are that the solution becomes sufficiently concentrated to crystallize on cooling and that the very small quantity of foreign matter introduced renders it easy to obtain a pure product.

At 100 degrees Cent. the reduction to red salt takes place in about fifteen minutes. This method is practicable, but requires great circumspection. If the boiling is continued a little too long, the solution suddenly turns brown; the reduction has gone too far.

If a quick reduction is desired it is better to use an acid sulphite as a reducing agent and the following method gives satisfactory results. In a flask is placed 300 c. c. of water, 24 grams of potassium platonic chloride, 12 grams each of potassium acid sulphite and potassium chloride. Sodium acid sulphite should not be used. The introduction of sodium salts interferes with the crystallization; not indeed with the first crop of crystals, but later. These are made to boil rapidly together for twenty-five minutes, reckoned from the time when actual boiling begins. The solution is allowed to cool, filtered if necessary, and placed in a large flat-bottomed glass or porcelain vessel. In a day or two the red salt will commence to form large crystals. The addition of the potassium chloride causes the red salt to crystallize out first.

It has seemed worth while to give these methods in some detail because the red platinum salt is likely to find a constantly increasing use in photography, not only for platinum printing, but as a substitute for gold in toning. There is no doubt that platinum is a much better metal for toning silver prints than gold. Its tones are better and its action is much more reliable.

By all these methods this beautiful salt is obtained in fine ruby red prisms.

PROBABLE EXISTENCE OF A PLATINUM SUBCHLORIDE.

If, in obtaining potassium platino-chloride with the aid of a hypophosphite in excess, the heat is continued after complete conversion to the red salt, the solution in a few minutes changes from red to dark brown. The substance which gives the solution this dark brown color exhibits the following properties.

It is very deliquescent and cannot be crystallized. There is no satisfactory method of separating it from the other substances in solution. An oxide of platinum appears to be precipitated by the addition of potash, and this precipitate

when freshly made, dissolves easily in hydrochloric acid; but if it is thrown on a filter and washed, almost the whole of it runs through. This difficulty, it is true, can be avoided by washing with a dilute solution of potassium chloride. But the precipitate after washing is no longer soluble in hydrochloric acid, except that the acid dissolves out a little protoxide derived from the red salt, some of which is apt to escape reduction.

The brown solution exhibits the following reactions.

Hydrochloric acid has no effect.

Nitric acid decolorizes it.

Potash produces a brown precipitate soluble in an excess of the precipitant.

Ammonia, a brown precipitate insoluble in an excess.

The solution itself is opaque by reason of its intense color. When largely diluted it is yellowish brown and perfectly transparent.

From the method of obtaining this substance there seem to be only two possible explanations of its nature. First, that it is metallic platinum in a state of solution; this is decisively negatived by the reactions just described. Second, that it is a chloride containing less chlorine than platinous chloride; therefore a sub-chloride. If the precipitate obtained by potash could after washing be dissolved in hydrochloric acid, its constitution could easily be determined. But during the washing it seems to be converted into metallic platinum.

I have noticed that when a solution of the ruby red salt 2KCl , PtCl_2 is spread on paper and exposed to sunlight it does not blacken but assumes a yellowish brown color; it would seem therefore that light acts upon it much in the same way as a hypophosphite, reducing it probably to a subchloride. If the reduction was to metallic platinum this would be shown by the production of an intense blackness.

In all this, analogy with silver salts is unmistakable. Pure silver chloride is not reduced to metal by the action of light, for after exposure it yields nothing to nitric acid. Both metals seems to form subchlorides, the oxides corresponding to which are very unstable.

M. CAREY LEA.

TONING "ARISTO" PRINTS.

IN the November issue of the BULLETIN, Mr. F. H. Doyle discussed the toning of "Aristo" paper, and gave the reasons and remedies for the slight bleaching that occasionally occurs in the fixing bath. Mr. W. H. Statham, of the firm of Statham Bros., photographers, at Weedsport, N. Y., sends us the following regarding the toning of blue-label "Aristo" paper:

"With your permission I would call your attention to a new formula for toning the American "Aristo," blue-label brand, which I have been using some time with most excellent results. With this toning bath the prints do not bleach and change tone in the fixing, which often occurs in the use of some baths, but there is a degree of simplicity and certainty in the toning which makes a failure an almost impossibility. The bath should be made up at least a day before used. It will not spoil; for it has great keeping qualities. Print down, or a trifle darker, than the desired shade. When finished, dampen and wash as per

instructions accompanying paper. Make stock gold solution, 15 grains gold to 15 ounces water :

TONING BATH.

Equal parts of { salt	{ bicarbonate of soda }	Teaspoonful.
Chloride of lime solution		1 dram.
Chloride of gold		1 grain.
Water		80 ounces.

Let stand twenty-four hours before use.

“When ready to tone add gold to make speed of bath from ten to fifteen minutes, with bath slightly alkaline. Tone to exact shade desired, and immerse prints in cold water made slightly acid, or in a weak salt solution. Make fixing bath 1 ounce saturated solution hypo to 20 ounces water. With this bath any tone from a cherry red to a dark brown can be obtained, and, if properly treated, prints will never bleach or change in hypo.”

A STAND FOR THE REDUCING CAMERA.

I SUBMIT a photograph of a piece of apparatus which I have devised and enjoyed the use of in my lantern-slide work. I am the possessor of one of Anthony's lantern-slide cameras, and while thinking over the shape of a proper stand or support for it, I struck upon the form of that shown by the aforesaid photographs, which I will endeavor to make more lucid by a short description.

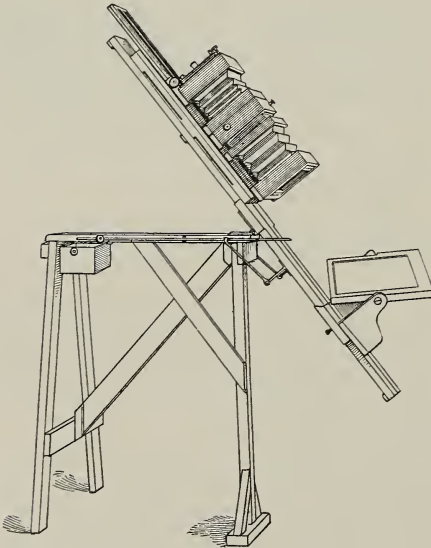
The arrangement of the legs is such that gives stability, thus avoiding any vibration caused by unevenness of the floor, for three legs may be readily placed

thereon so as to straddle any inequalities.

The camera slides on the plane of its support, and is secured at any point thereon by a thumb-screw. Also on this plane is placed a mirror so arranged that it can be secured at any angle, so as to catch and reflect on to the negative the rays of light falling from a window near which the stand is placed. The plane is hinged and inclined in any position from a vertical to a horizontal one, thus enabling one more easily to properly reflect the light.

It is secured in any position, by two “transom lifts,” readily obtained in any hardware store, one placed on each side. I find that it is much more easy to copy a drawing, or any other matter, especially when bound in book

form, when the camera is placed in a vertical position. You may arrange the mirror to a point at right angles to the line of the camera, and so make a support for a book, etc. It will lay where you place it, without any tacks or nails, and so save any mutilation.



I have amused myself greatly during the last winter with the use of this stand, especially in making of lantern slides, but I have found it useful in much other photographic work, as I can adapt it to almost any required position.

You are enabled to focus with comfort and precision when the camera is placed in a vertical position, as you get a good, even illumination, and you can handle the focusing cloth with comfort, when looking down upon the ground-glass.

A. S. MURRAY.

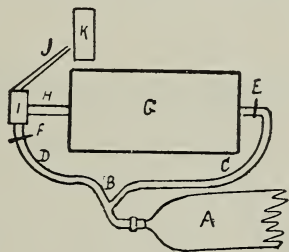
[From the *Optical Magic Lantern Journal*.]

THE PRINCIPLE OF A SATURATOR.

WE recently heard that an operator who was familiar with saturators was lately using one for the illumination of some *tableaux vivants*, but as he was suddenly called to one side, he left a lanternist friend in charge for a few moments. Now this friend, who had never before seen a saturator in use, became somewhat curious, and tried the effect of turning the various taps slightly, in order to ascertain how they controlled the light. The result was that he managed to get a long and non-luminous flame, and, becoming somewhat alarmed, he sought his friend to put matters to rights again. The meddlesome friend, seeing that he could not manage the saturator, at once formed the opinion that they were very complicated affairs, and subsequently wrote to us to inquire what he could have done to the saturator that made it behave as it did. As a matter of fact he had merely turned off the direct oxygen supply, but he, being unacquainted with the principles of a saturator, did not know what he had done nor the manner of rectifying it.

As it is possible that there may be others among our readers whose knowledge of saturators may be somewhat limited, the annexed sketch will at once enable them to understand how they work.

(A) is a cylinder of oxygen connected to a metallic Y piece (B) by means of a short length of rubber tubing. Attached to the two branches of the Y piece are two lengths of rubber piping, that marked (C) being connected with the inlet of the saturator, at or about which juncture is the tap (E). The saturator (G) we will suppose to be packed and charged with ether. Now, if the cylinder (A) (which should, of course, be provided with a regulator) be turned on, the oxygen gas will reach the tap (E), and on this being turned more or less, a certain quantity of the oxygen will pass through the saturator, and in doing so will take up or become saturated with the ether vapor, and will arrive at the mixing chamber (I) via the connecting tube (H). If then a light be applied to the nipple (J), the gas will burn in precisely the same manner as house gas, the size of the flame being regulated by means of the tap (E). In order to render the lime (K) incandescent, it is necessary that we have a percentage of pure oxygen. From the sketch it would seem that the oxygen will already be in the tube (D), it being prevented from passing further owing to the tap (F); if this be now turned on slightly, free oxygen will be permitted to reach the



chamber (*I*), where it will mix with the saturated gas (which is now equivalent to hydrogen) and render the lime incandescent.

It will, of course, be necessary to adjust the two taps (*E* and *F*) until the requisite proportions of the two gases are obtained.

Irrespective of the make of saturator, the general principle is as above stated, but in the sketch the controlling taps are placed as shown for clearness, whereas with commercial saturators the tubes are bent in such a manner that the controlling of the gas is done from behind, that being the most convenient position.

THE advantages of saturators are admitted by everyone. A pint of ether weighing 16 ounces will furnish enough vapor to burn as long a time as 30 feet of coal gas or thereabouts. If this volume of gas were to be enclosed in bags it would occupy a space 5 feet long, 3 feet wide and 2 feet deep, to say nothing of the boards and lost space in packing, or if contained in a cylinder would weigh about 36 pounds. This is the chief argument in favor of the ethoxy light as opposed to the oxy-hydrogen.

Victor Schumann.—We extend our congratulations to our highly esteemed friend, Victor Schumann, of Leipzig, who has, in consideration of his many services to science, received the degree of *Doctor Honoris* from the University of Halle.

[From the *Practical Photographer*.]

MOUNTING AND TREATMENT OF PROCESS BLOCKS.

Too slight attention is, I think, given by process firms to the mounting of the plates. The mounter is generally the worst-paid man in the establishment, if, indeed, he is not an inexperienced lad. The result is that letter-press printers loudly complain of the mounting of the majority of process blocks.

One of the worst faults is when the blocks are more than type high. It is not to be expected that the average printing office is possessed of appliances for planing down the backs of blocks truly, hence the block has to be sent out to the nearest carpenter, too often delaying the form on the machine, for it is when the machine minder begins to "make ready" that the fault is discovered. It would be far better if process firms would make it a rule that all blocks sent out are just a shade below type height, for it is easy enough to underlay and so bring the block up.

Want of squareness at the sides is another common fault. The process worker who knows nothing of the printer's troubles in locking up a big form of blocks and type cannot appreciate the seriousness of an error in this direction. Suffice it to say, that every block should be trued up with shoot plane to the greatest possible exactness.

Most unsightly are nail heads when they show up in printing. The mounter may have driven the nails home, but he does not know the effect of the pressure of the cylinder and the clatter of the rollers over the blocks on the letter-press machine. The plate begins to rise and loosen, and draws the nails as it does so.

This effect is easily demonstrated. Take a zinco block of average size and bring it down on its back with a smart slap two or three times on a stone or iron

slab ; it will soon be seen that the plate is loosening. Another cause of plates becoming loose is when printers wash up the forms—at least I refer to those printers who do not know better than to wash zinco blocks with lye—the water first swelling the wood, which afterwards shrinks. The nails are drawn as the block swells, and the plate separates from the wood as it shrinks in drying, leaving the nail heads standing up. These troubles lead me to suggest that plates should be cemented on the block as well as nailed. To do this, get a can of Le Page's belting glue, and with this attach a piece of good stout printing paper to the back of the plate, which should have been previously freed from shellac varnish and roughened with emery paper. This will make the glue stick tenaciously. *Verb. sap.*: Don't put too much on. Next, glue the surface of the block and also of the paper backing of the plate, then bring the two together and put under pressure for as long a time as can be allowed. When dry, the plate holds "like grim death." It is, in fact, quite superfluous to put any nails in, but I don't recommend this. Printers like to see the nails, because they know the plate is then safe, according to their notions. Certainly, a plate will never come off without the warning rattle when nailed on. Why I recommend the cementing is that it prevents the plate "rising," and I think a much better impression is obtained when the plate is rigidly attached to the block.

There is all the more reason why the plate should be attached by other means than nailing in the case of half-tone blocks. The nails have in this case to be driven through a very narrow and thin margin, and the hold is not sufficient to stand the wear and tear of a long run. To make matters worse, the zinc is often impoverished in the enamel process, so that it readily snaps. I have heard lately of a plate cracking right in two while on the machine. This would never have happened had the plate been cemented down in the way I have suggested.

The mention I have made of the enamel process reminds me that a vexed question between process worker and printer is whether the enamel should be left on or not during printing. Well, it depends. If the process worker can make a plate from which the enamel shows no tendency to peel, and if he knows from experience he can rely on its holding, then leave the enamel on ; it will do no harm, and will prevent the plate corroding. But I know of no worker who would or could give such a guarantee ; therefore, I think it best to apply the benefit of the doubt, and take the film off. Some will say it is difficult to do this. Not at all. Just get an enameled iron tray, and put it on the stove with sufficient water to cover the plate. Into this put a lump of commercial caustic potash. When the solution is quite hot, dip the plate in for a moment, and then lay it on the sink—grid and scrub with a stiff brush. The enamel will easily come off, and the plate will be quite clean. Be quick in these operations ; get the potash rinsed off the plate and the latter dried instantly. Potash allowed to stand on the plate, even for a very short time, will badly corrode. It is best to have ready some common paraffin oil, and as soon as the plate is dry, brush some of this well in. This will stop any corrosion.

Zinco blocks which have to be put away for any length of time, especially if in a place suspected of being damp, should have melted paraffin wax poured over them. This is a sure means of protection.

Need I add that the ink should be always cleaned off zinco and copper blocks with turps or paraffine, never with lye. Copper blocks which have become tarnished or corroded should be washed with a weak solution of cyanide

of potassium, which should be well rinsed off, and the plates afterwards brushed with paraffin or turps.

It may be interesting to state that of the three examples of work given in my book, "The Half-Tone Process," the enamel has been allowed to remain on the copper block, but has been cleaned off the brass and zinc ones.

JULIUS VERFASER.

ARRESTED MOVEMENT AND A LIVING POSE.*

IF an exhibition of pictures has any points of practical value, surely one of the foremost will be that of showing, out of what has been attempted, what may be considered desirable and what the reverse. Experiments have to be made; I mean experiments in picture-making, as it is called, but it goes without saying that not all experiments succeed. The subject of movement, as arrested by the camera, is one that has a vast host of experimenters of a not very-serious type, in hand-camera workers, and they offer us—with a few exceptions—a great many results that prove their experiments to be failures. So overwhelming and alarming is the array of snap-shot drivel that one is half-tempted, in recoiling from it, to believe that movement of any sort is undesirable for a serious pictorial subject.

Yet, of course, instinct rebels against utterly inanimate nature, especially if that nature includes figures, human or otherwise. Fossils may do for a museum, but not for a picture gallery, at least in Piccadilly. If a figure is used, it must be alive, must have blood coursing in its veins; and there comes in the difficulty, one that even painters, with their long years of historical experience, have by no means mastered. And since this is so, there is less, perhaps, to be ashamed of in the fact that photographers, with their brief experience, fail too. That it ought to be possible to suggest life, pictorially, is certain, from the fact that there are many good pictures—good from many, if not from all, points of view—that do suggest vitality; pictures that are good in that particular suggestion. That it is possible to suggest movement I am by no means so certain. One sees attempts of many kinds—careful, bold, even reckless—at depicting moving figures, and from the point of view simply of the satisfactory suggestion of motion, I, for one, feel strongly tempted to put it that the arrest of movement needful for pictorial purposes is not only the arrest of movement, but also the arrest of all impression of movement.

For clearness, it will be best to roughly classify the various kinds of figure pose that are possible, and then to eliminate the unavailable. If this will not help directly to a conclusion, it will, at least, narrow the field of inquiry.

We may surely omit from notice the fossil pose, the lay-figure pose, the tailor's-model pose, the fashion-plate pose, and the show-case pose, all so singularly alike. They are one and all beneath contempt, the more's the pity for the commercial photographer; though this puerility is doubtless largely the cause of his going under. The fact is, any amateur can make a photographic fool of his friend; it doesn't need a professional.

The first position that has any possibility of value is the pose of repose, or the statuesque pose. That is, attitude that would be naturally taken and as naturally

* Read at the Salon, October 24, 1894.

retained for an appreciable amount of time—one that implies vitality as an inherent necessity, not such an one as might be obtained by bolstering up a figure with balustrades and Japanese screens, with head-rests, posing chairs and other surgical appliances that give you toothache even to contemplate. As a rough example of what I mean, the position that would be assumed and retained by a person holding a book and reading might be taken as a type of restful posing. There may be in this pose, of course, the smallest amount of vitality possible; still there is life, however little; and at times there may be much. But, either way, it is a pose that has in itself nothing necessarily unpictorial. In fact it is used in the best portraiture, by whatever method, to the practical exclusion of any other. While there is life in it, one feels, however, that its chief virtue is its power of expression, of character, thought or sentiment, rather than of living force. Subjective rather than objective, it is more the pose of inwardness than of action.

At the other extreme, there is the pose caught by the instantaneous shutter in a very brief fragment of time. Of this the first criticism one is tempted to make is that a figure is never seen in the position that is given, though the accuracy of the fact of its having passed through that position be not disputed. This argument is good enough in its way, only it will not hold together, nor yet satisfy; because, in the first place, it is quite easy to see a large number of snapshot positions if you look for them. But, further, see them or not see them, the positions offend an instinctive idea of what sort of pose is available in a picture.

A man leaping over a pole, if caught by the camera when he is just above the pole, looks to be falling backwards on to it, and to be in imminent danger of breaking his back across it.

In snap-shot work as such, allowing for some lucky or intentional exceptions, the effect of motion is wanting. The figures get into positions they could only possibly be in while in rapid movement, and they are then petrified, reminding one in their grotesqueness of the tableau of magic sleep in the "Sleeping Beauty," where everyone retains the position he was in at the fatal moment, no matter how absurd. Take a print of a man performing the high leap, in the position I have suggested, imagine all the rest of the thing to be right—lines, tones, balance, and the rest—and hang it on a wall where you will be looking at it, willy-nilly, best part of the day. How long, how many hours, how many minutes, will you be contented to be irritated by such a scientific record of a man about to break his back across a wooden pole? Verily, there is a vast distinction between arresting movement and suggesting it. It is not the untruth to vision that is objectionable and irritating, so much as the disagreement between what the man appears to be doing and what you know he is intended to appear to be doing.

I have an idea of a vague sort that, when a diagram of a moving figure is looked at, the only force that is felt by the onlooker is that of gravitation. Probably all the various theories, and still more remarkable rules, about balance and composition in pictures can be traced back to this feeling instinctively after gravitation. But as regards movement, I would say, that unless it is directly due to gravitation, there must be an unavoidable clashing between the force supplied by the imagination of the onlooker and the force actually arrested by the camera.

Accepting or assuming that an extreme instantaneous pose is not acceptable, my main object is to raise the point of how much movement is capable of being

satisfactorily suggested in a picture. May we go beyond the statuesque pose? If so, how far short of snap-shot pose must we stop?

Of course, in all matters, pictorial or artistic, distinct limitations and sharp definitions of "do this," "do that," are as undesirable as they are fortunately impossible. The safest limit, one that seems beyond dispute, is still liable to be successfully passed in particular and exceptional cases. But, notwithstanding, I cannot help thinking that a general understanding—or endeavor to understand—how far movement may be pictorially rendered under normal conditions, may be of much assistance towards the discovery of a satisfactory "living pose," and towards the avoidance of experiments in movement that are foredoomed to failure.

With all respect for the work of painters, great and small, good and bad, which, added together, represents a large amount of practical experience, a gallery of either ancient or modern pictures has little to offer towards the solution of this problem—what to attempt, though usually plenty of samples of what not to. A picture of galloping horses—a whole canvas full of them—each with his four legs off the ground, may be a very clever snap-shot, in oil paint, but one feels disposed to quote Rudyard Kipling with his "It's clever, but is it art?"

"We have learned to whittle the Eden Tree to the shape of a surplice-peg,
We have learned to bottle our parents twain in the yolk of an addled egg,
We know that the tail must wag the dog, for the horse is drawn by the cart;
But the devil whoops, as he whooped of old, 'It's clever, but is it Art?'"

But whether an animal be accurately or inaccurately drawn as regards scientific fact, if it has all its legs off the ground, it wants a lot of suggesting to prevent the feeling that, instead of alighting several feet in front of its forelegs, it is not going to drop straight down on the ground beneath it, breaking its limbs or its back in so doing.

Movement, if it is to be used pictorially, must be suggested by something outside and beyond a correct instantaneous pose, especially when there is anything approaching rapidity about it; otherwise it is no better than a Muybridge or Edison photograph, even though the painter be Meissonnier or a Lady Butler.

Nor even do I find much consolation in the work of that greatest of modern painters, Millet. The legs of his "Sower," or the potato in the air falling from the hand of his "Potato Sower," seem to me attempts after the undesirable; attempts, too, that fortunately are not frequent in his work. I cannot help recalling Professor Boys' "Flying Bullets" whenever I look at that unlucky potato. Meissonnier's "Tavern Brawl," "La Rixe," and his cavalry charges I would put down as quite irritating; and generally, without quoting especial instances, I believe it will be found that almost all attempts at depicting rapid movement are unhappy, and, if a picture in which such an attempt is made is tolerable, it is usually only so because some other quality which is good more than compensates for the weak point.

In looking through modern books about art—and what unspeakably dull reading they are—and in talking to modern art students, I have been not a little surprised to note the remarkable absence of theory about art. Students and painters, perhaps, have got up some of the stock rules and precepts of antiquity, but they seem to care little for them, and to have quite lost the peculiar state of

mind that is ready to theorize afresh on any given topic. Why, a photographer—any photographer—has a cut-and-dried theory on any and every subject you speak to him about! He will dogmatize on Art with a very big A in a way that puts poor old Ruskin quite into the shade, and that on the slightest provocation. I can only account for this capacity—or is it incapacity?—by the fact that a photographer is bound to have a little scientific knowledge, generally a very little, and that he illustrates the truth of the old adage about the danger of little knowledge. And I have frequently noted, too, that the more scientific the man, the more is he dogmatic about pictures, illustrating in a way the truth of the statement that a single scientific fact is fatal to good art; or, as the point has been somewhat neatly put, “to make a science of art is to make a lying fact of a truthful fiction.”

Notwithstanding this, I am going to give myself away by suggesting an idea about the pictorial use of arrested movement, if it must be used at all.

Herbert Spencer points out, I believe, that a picture ought to be nearly, but just not completely, balanced. Perfect equipose is stagnation or death. Imperfect equipose, or, as I think he calls it, a moving equilibrium, means life. His suggestion for a picture as a whole is that there shall be just sufficient departure from perfect balance—balance in the widest sense—not merely of composition—to arouse the interest and attention of the onlooker. Now my idea is that this principle may, with advantage, be applied to the posing of the figure. A position of absolute repose is lifeless and dull; there is too perfect a balance. What is needed is that this balance shall just be disturbed, but not sufficiently for the figure to appear in peril of falling. It is the balance of the figure, not the figure itself, that is to be upset—if you follow the distinction. A man walking, according to this idea, should be represented more nearly as a standing figure, that in the extreme position his legs would take at the full stride. A position of nearly standing, but just not standing, seems on the whole the best pictorial “walk.” We all know that for the stage there is a special kind of action, gesture, and walk used. We call them dramatic or stagey, according to the point of view or success of the performance. So, it seems to me, we must have a pictorial kind of action, gesture, and walk, that shall express to the onlooker all that is intended, and yet not offend the requirements of our art, and the conditions under which our pictures are seen.

Leaving the question of the movement of animate nature for that of inanimate, the difficulties are not lessened.

It may be hard to pose a figure, but is impossible to pose a breaking wave or a wind-blown tree; and almost as impossible to make them seem moving. For instance, how many photographs of wind-blown trees give any impression of wind—omitting, of course, all memory of a catalogue title? I have seen pictures, presumably of broken glass, but which were called photographs of breaking waves, or which were not called, but were all the same, oil-paint copies of them by our R. A. friends over the way, resembling more than anything else a dish of jelly that was broken up because it wouldn't set.

Of course, these things ought to be good pictures, because we all know that the art of the new photography is to make a picture of something from a negative of something else. Still, a new photographer does not generally work at any angry sea to obtain a picture of “still life!”

A common suggestion for the expressing of this kind of motion is to prolong

the exposure enough to give a blurred image. Except that it is most difficult to keep any definite control over the results, the idea seems good. As a matter of fact, remarkably few successful results seem to be obtained, or, at least to be shown.

Another suggestion often made is to let the movement accumulate, and average itself off, in a similar fashion to what we see in a composite portrait. For example, a pin-hole exposure of a waterfall is usually as happy as any other kind of exposure of such a subject. But I confess to not having yet attempted a pin-hole picture of a breaking wave; that would demand an enthusiasm for the pin-hole I do not pretend to; though, doubtless, if only the hole were large enough, we might get something very novel.

A last suggestion that may have its use under some conditions, is to employ some kind of line emphasis in the direction of the movement. A horizontal slip instead of a pin-hole, or, still better, a cylindrical spectacle lens, used to give the same effect. As an assistant in giving the impression of wind, I believe this method to be of great value; though I hardly expect, just yet, to hear of Mr. Dallmeyer bringing out a new hand-camera with a rapid lens giving a large amount of line as aberration. But it may come some time or other, since there is no practical difficulty in the matter.

In starting this topic of arrested movement I have hoped rather to arouse discussion, and so to get suggestions, than to solve the problem. While thoroughly believing that every one will do as he ought to do, exactly as he can, if not quite exactly as he would like, in this matter, I still feel that there is a vague limitation which he would be wise not to attempt to overstep. And I offer as my suggestion, that the nearer an instantaneous pose approximates to a statuesque pose, the better chance there is of obtaining a satisfactory "living pose."

If the instantaneous pose actually assimilates with the statuesque, so much the better; for, in justice to myself, I must add that I do not believe that any kind of instantaneous arrest of movement is of any pictorial value whatever.

Snap-shots in oil-paint or silver bromide are equally objectionable.

Hand-cameras, from their popularity and their labor-saving and laziness-promoting facilities, are responsible for a false acceptance of a kind of work that ought only to be shown for the approval of the man of science, or for that of the visitor to a lantern show. Were the wood of which these dark boxes are made growing on the trees from which it came, and were the leather still undressed upon a living animal's back, it might, perhaps, so occur that a picture could be made from them; not otherwise! As an aid to the artist, I would trample them under foot, and grind them into splinters and pulp.

I have no doubt I shall be made to suffer for giving voice to this opinion, for the hand-camera is the shrine of a wondrous brazen god, that moves with a sudden spring, and, taking you unawares, rends you limb by limb into agonized contortions. And its devotees are fanatics, mad with the new wine mysteriously mixed in the dim incense-perfumed vaults of a Bohemian temple, wherein is kept burning a solitary lamp of ruddy flame. Their wiles are to entrap you into their cages of silver and gold, that they may first show, and then make a sacrifice of you before an assembled host of fellow-worshippers, and this at the dictate of their imperious and omnivorous deity and his insatiable priests, the snap shutter and its manufacturers. Of all such beware!

OUR ILLUSTRATION.

Mr. Rockwood again furnishes the frontispiece. Regarding it he says: "When I visited Europe for the first time in 1877, I called, while in Paris, upon the famous caricaturist, Charles G. Bush. Mr. Bush is now engaged on the *Evening Telegram* of this city. As old friends, we had a very free talk about art, which was summed up in this question by Mr. Bush: 'After visiting the art galleries, what are your final impressions of the modern school of painting, especially in your line, portraiture?' I said briefly, in answer: 'Its absolute unconventionality. I find that the greatest artists seem to be free from mannerism and conventionality, and seem to paint, portraits especially, according to the characteristics of each sitter. Dubuffe, not only a great genre painter, but also the most successful portrait painter living, I found had been painted, looking through a dormer window, leaning upon his left elbow, with a cigar in his hand, dressed in studio cap and velvet coat; apparently painted, as we would say at the present time, from a snap shot.' I added: 'When I return to New York, I shall, after this, photograph my clients just as I find them, as free from conventionality and photographic precedents as possible.'"

This general principle, I think, I have followed pretty faithfully since then in all my portraiture. I study pictures and living models in church, in theatres, or wherever I see well-costumed and graceful people. I carefully note their poses and reproduce them in the studio as closely as may be and with as much consistency as possible with regard to their temperaments. One certainly would not photograph a subject of passive temperament in a startling or fighting attitude; or a nervous, active person in indolent form; so, in the pictures that are published in this number, I have tried to seek the most graceful lines and picturesque effects, as free as possible from conventional poses of the day."

The prints are on American "Aristo, Jr.," a paper that has found great favor with professional and amateur. The general method of working is as follows:

Printing.—Print considerably darker than desired when finished. Good bold prints are made under two or three thicknesses of tissue, especially in cases of weak negatives.

Washing.—In summer, use water as it runs from the tap, natural temperature. In winter, use only enough warm water to give comfort to the hands. It is important to wash free silver and preserving chemicals from paper before toning, but do so by rocking tray through five or six changes of water. Do not handle prints over. It is not necessary, and increases the chances of red spots and stains.

Toning.—Tone in any good gold bath, made slightly alkaline, with speed about eight minutes. Difference in water in different localities makes it impossible for us to give the exact amount of alkali necessary for separate toning bath. We recommend for an alkali, 1 part borax to 2 parts acetate of soda (saturated solution). If the prints fail to clear up, leaving muddy half-tones, too much alkali has been used. If the prints bleach and turn blue in the half-tones, while the shadows remain red, not enough alkali has been used.

Fixing.—Fix in hypo bath, 10 to 12 hydrometer test, or 1 ounce saturated solution hypo to every 16 or 18 ounces of water. Have plenty of bath to cover prints nicely, and separate thoroughly. Fifteen or twenty minutes will be sufficient time.

Final Washing.—Finally wash thoroughly. It is the frequent and complete change of water that washes the hypo from a print, not continuous soaking. One hour in running water that changes completely every few minutes is sufficient, or seven or eight changes of water if prints are washed by hand.

SOCIETIES.

THE LENAPE CAMERA CLUB.—Organized October 13, 1894. Eighteen members. Officers: President, E. T. O'Kane; Treasurer, G. L. Stayman; Secretary, George C. Hipple, Delaware, O. The word Lenape is the Indian name for Delaware.

THE PHOTOGRAPHIC SOCIETY OF JAPAN.—An ordinary meeting of this Society was held in the rooms of the Geographical Society of Japan, Nishikonya-cho, Kiobayashi-ku, Tokyo, at 5 P. M. on Friday, September 28th. Dr. E. Divers, F.R.S., Vice-President, in the chair.

Messrs. A. F. Macnab and H. J. Sharpe were unanimously elected members of the Society.

Mr. K. Ogawa sent a set of collotypes by himself from negatives made in accordance with the methods of the "New School" of photographers, sometimes called Naturalists. One of the teachings of this cult is that nothing in a photograph should be as sharp as a good photographic lens can make it, and certainly in the prints shown nothing was quite sharp. The pictorial effect was generally admired.

Mr. Y. Kobayashi showed a posing chair of ingenious design and excellent workmanship. The seat could be raised or lowered, and its angle could be altered. Attached to the back of the chair was a head-rest, which could be altered to any position that could possibly be useful.

A number of Burton actinometers (H. J. Burton) were shown. These are for timing the exposure of carbon prints. Each consisted of a film on which had been printed and developed six negatives, each of a greater density than that immediately before it. In using the actinometer, it is easy to judge to which of the negatives of the actinometer the density of a negative to be printed from in carbon most nearly corresponds. Sensitized albumenized paper commonly prints in about the same time as carbon tissue. It is therefore only necessary to place a scrap of such paper under the actinometer and to expose this and the negative to be printed from in carbon together, to be able to judge the exposure necessary for the tissue.

The proceedings ended with a vote of thanks to the Chairman.

IF CAMERA CLUB.—The following notice of the disbandment of this organization was received by the BULLETIN:

"The members of the If Camera Club, arrayed in plug hats and wearing white gloves, are respectfully and respectively requested to attend the funeral ceremonies of the Club, which will be held at the residence of the president of the deceased, 12 Congress street, J. C. H., on Saturday evening, November 3d, at 8 o'clock sharp.

"Immediately after the services the will of the deceased will be read, and the liabilities impartially distributed. No flowers.

"N. B.—The occasional signs of life that the corpse manifests are considered

by the officers who are watching the remains as "fakes," and the burial will certainly occur on the date specified, unless the corpse escapes meanwhile. For-sakenly, Joseph Cottier, Funeral Operator."

MINNEAPOLIS CAMERA CLUB.—This Club has just completed its set of slides for the Lantern Slide Interchange. For some time past one or other member of the Lantern Slide Committee has been at the Club rooms every Wednesday, and on Saturday evening, November 10th, the Committee selected one hundred and thirty-eight slides to be sent to the New York committee. Many of the members submitted very fine slides, but the most noticeable was a set of twenty-two groups, by Mr. A. S. Williams, the Treasurer of the Club. On Monday evening, November 12th, the Club members and their friends met at the rooms to see the slides, and it was the unanimous opinion that the slides were the finest yet submitted by the Club.

BUFFALO CAMERA CLUB.—Officers : President, George J. Bailey ; Vice-President, O. H. Havenstein ; Secretary and Treasurer, William J. Haskell, 445 Richmond avenue, Buffalo, N. Y.

PHOTOGRAPHIC SOCIETY OF WATERBURY.—At the meeting on November 6th the Society kept open house, the election returns being shown from the roof of the building. Light refreshments were served, and several flash-light photographs were made. Mr. L. S. White's phonograph furnished much entertainment.

PHOTOGRAPHIC DEPARTMENT OF THE BROOKLYN INSTITUTE.—The winter session of the above Society was informally opened on Thursday evening, November 1st, with a talk about exposure meters by Mr. W. Willich, one of the members. On the next weekly meeting night, November 8th, the President, Mr. W. H. Cooper, gave a demonstration of non-halation *versus* ordinary dry plates. A picture taken of an incandescent electric light showed that the non-halation plate had a marked advantage over its rival, the glowing filament photographing much sharper on the former plate.

On the 15th inst. the Department had its first lantern slide exhibit this season, when a number of excellent slides recently made by the members were shown on the screen. The Society is anticipating an intellectual and technical treat on Friday, the 30th, when that veteran photographer, Mr. Bogardus, is expected to give his experiences of "Forty Years Behind the Camera."

Fifty-nine frames were exhibited by the members of the photographic exhibition held in connection with the 23d Regiment Fair, Brooklyn. Mr. Wundram was awarded a silver medal for some exquisite portrait studies, and Messrs. W. H. Cooper, Theo. K. Hastings, John W. Millard and E. G. Tremaine were awarded certificates of merit. Mr. Gould W. Hart received a certificate of merit for his lantern slides.

KEARNEY CAMERA CLUB.—Organized October 20, 1894. President, J. T. Morey ; Vice-President, Miss H. E. Janes ; Treasurer, Miss A. E. Knight ; Secretary, M. A. Hoover, M.D. Executive Committee : R. M. Brockman, A. Snare, Miss L. A. Piper. Date of meetings, first and third Saturdays of each month, at rooms in Andrews' Block.

CALIFORNIA CAMERA CLUB.—The fourth annual pay exhibition of lantern slides was given at the Metropolitan Temple, San Francisco, on Friday, November 16th, and was a great success.

BROCKTON CAMERA CLUB.—Established 1894. Regular meetings, third Friday of each month at 8 o'clock in Room 8, Smith Building. President, E. L. Brown ; Vice-President, R. E. Bayton ; Treasurer, S. N. Eaton ; Secretary, A. L. Evans, P. O. Box 211, Brockton, Mass.

NORTHWESTERN PHOTOGRAPHERS' ASSOCIATION.—President, T. M. Swem; Secretary, F. H. Lloyd. The first Annual Convention will be held in St. Paul, Minn., on February 20, 21 and 22, 1895.

THE MYSTIC CAMERA CLUB, MEDFORD, MASS.—At the regular meeting of the Mystic Camera Club, held on November 8th, the new set of slides to accompany the lecture on "The Coast of Massachusetts," was shown for criticism and comment. This set is to be Mystic's contribution to the New England Lantern-slide Exchange for 1894-95.

In the business meeting that followed, provision was made for new heating apparatus. It was voted that all nominations for officers for 1895, must be in before the close of the second meeting in December. An amendment to the constitution was read and laid over to the next meeting for action.

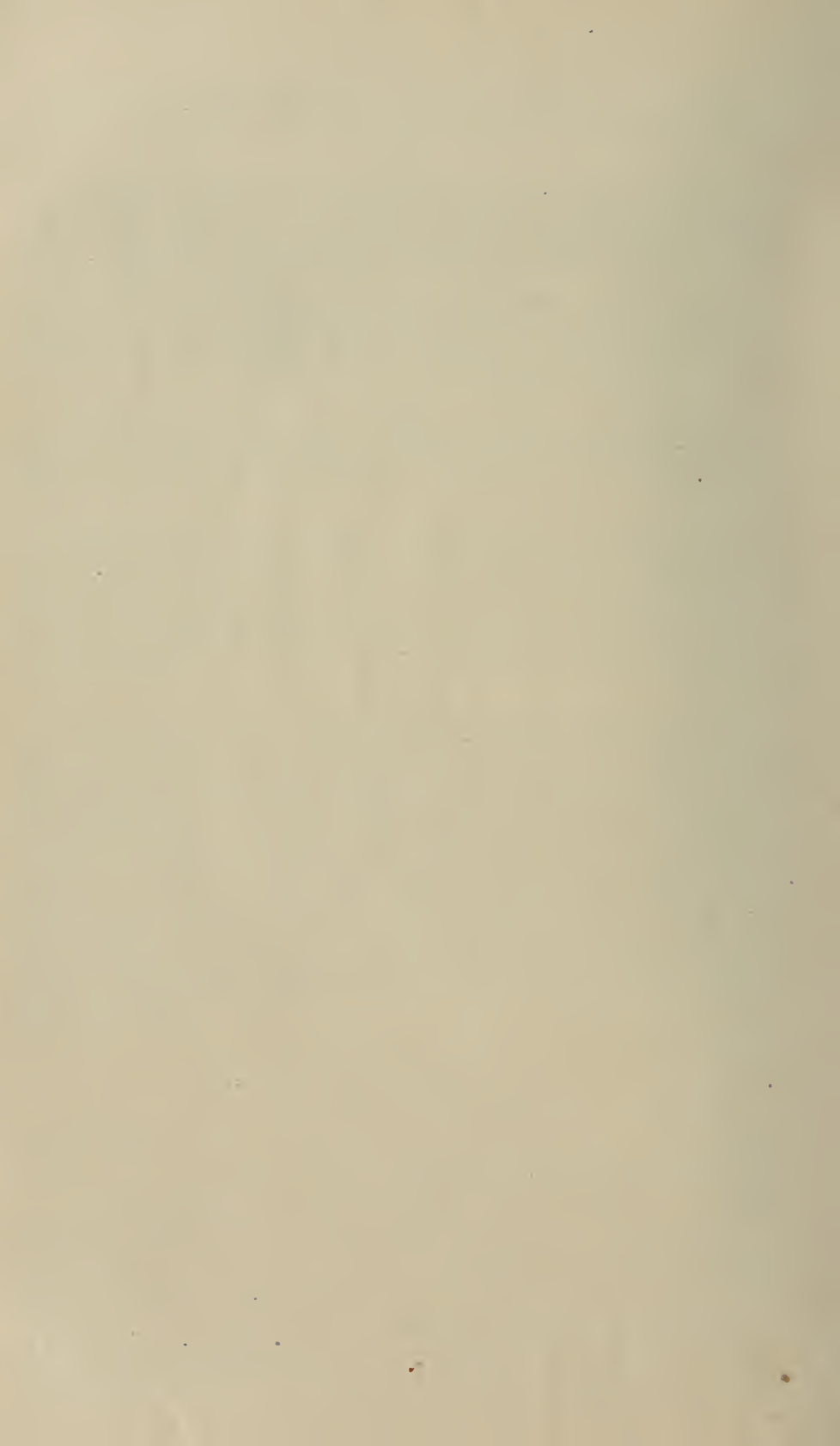
CAMERA CLUB OF HARTFORD.—The annual meeting was held October 20th. The following officers were elected: President, R. A. Wadsworth; Treasurer and Secretary, Edward H. Crowell. Executive Committee: Dr. G. L. Parmele; L. W. H. Gradisky and A. H. Pitkin.

ORANGE CAMERA CLUB.—LANTERN SLIDES EXHIBITED.—The Orange Camera Club's third exhibition of lantern slides, held in Music Hall on Thursday evening, November 8th, was superior in every respect to its predecessors. Twenty-one members of the Club were represented by one hundred and thirty-one slides. Hayward R. Halsey announced the slides, and the lantern was in charge of Harry R. Terhune and John L. Yatman. The programme was pleasantly varied by songs and music.

ALBANY CAMERA CLUB.—A largely attended meeting of the Albany Camera Club was held on Friday evening, November 2d, President Paterson in the chair. Mr. Byington, for the Outing Committee, reported that, owing to the cold weather and lateness of the season, but few responses had been received. It was suggested by him that the outing be postponed until the following spring. After some discussion, a resolution to that effect was adopted. Dr. Leo F. Adt, of Troy, was elected a non-resident member, and Wait H. Stillman, also of Troy, and John A. Becker, of Albany, were elected to associate membership. After the meeting, one hundred and ninety slides, belonging to Miss Clarkson and kindly loaned to the Club by her, were shown and greatly enjoyed by all present. Miss Farnsworth, of Albany, was an interested spectator, and expressed herself as very much pleased and entertained, as did, also, several other ladies. A resolution of thanks to Miss Clarkson, for her kindness in loaning the slides to the Club, was adopted.

TABLE OF CONTENTS.

	PAGE		PAGE
ARRESTED MOVEMENT AND A LIVING POSE.....	405	OUR ILLUSTRATION.....	410
A STAND FOR THE REDUCING CAMERA.....	400	PHOTOGRAPHY IN CENTRAL AMERICA..	387
FLASH-LIGHT PHOTOGRAPHY.....	381	PHOTOGRAPHY IN LONDON.....	390
HANDICAPS IN PHOTOGRAPHY.....	394	SOCIETIES.....	411
ITEMS OF INTEREST.....	383	THE BURTON ACTINOMETER FOR CAR-	
JOTTINGS FROM GERMANY.....	402	BON PRINTING.....	395
MOUNTING AND TREATMENT OF PROCESS		THE DEPOSIT OF SILVER IN PHOTO-	
BLOCKS.....	403	GRAPHIC PLATES.....	393
(1) ON SOME NEW METHODS OF OB-		THE ELECTRIC LIGHT IN PHOTOGRAPHIC	
TAINING PLATINO-CHLORIDES. (2)		STUDIOS—A FEW HINTS.....	391
PROBABLE EXISTENCE OF A PLATINUM		THE PRINCIPLE OF A SATURATOR.....	401
SUBCHLORIDE.....	396	TONING "ARISTO" PRINTS.....	399





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